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WATER QUALITY IN THE EVERGLADES AGRICULTURAL AREA AND ITS IMPACT ON LAKE OKEECHOBEE

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PART I

INTRODUCTION

Lake Okeechobee and the Everglades Agricultural Area (EAA) are two of the most prominent features of South Florida. The Lake is often referred to as the "liquid heart of South Florida" and holds the distinction of being the second largest freshwater lake totally within the United States. Currently the Lake serves as a major recreational area for sport fishing and supports a substantial commercial fishing industry. It serves as a direct source of potable water for five local municipalities and as a back up regional supply source for the highly urbanized East Coast during drought periods. It is the principal source of irrigation water for the EAA and acts as a flood reservoir for storm water runoff from over 3,700 square miles of total drainage basin including a large portion of the EAA.

The EAA is a highly productive agricultural region extending from the south shore of Lake Okeechobee to the northern levees of the Conservation Areas (Fig. I-1). The eastern boundary is considered to be the L-8 Canal and the western boundary the L-1, 2 and 3 levees. Approximately 75 percent of the 700,000 acres within this area has been developed into one of three principal types of agriculture. The primary crop is sugar cane with 45 percent of the area planted in cane. Pasture lands account for 20 percent of the area and various vegetable crops account for 10 percent. The remaining 25 percent of the area is mostly undeveloped with less than 5 percent of the total 700,000 acres accounted for by the urban areas of Clewiston, South Bay, and Belle Glade. Due to the rich organic soils of the area and the favorable subtropical climate agricultural productivity can be maintained year round. However the low relief (average slope is 0.2 feet/mile) and the seasonal distribution of rainfall necessitates extensive drainage and irrigation systems. Forced drainage by pumping is required in the wet season

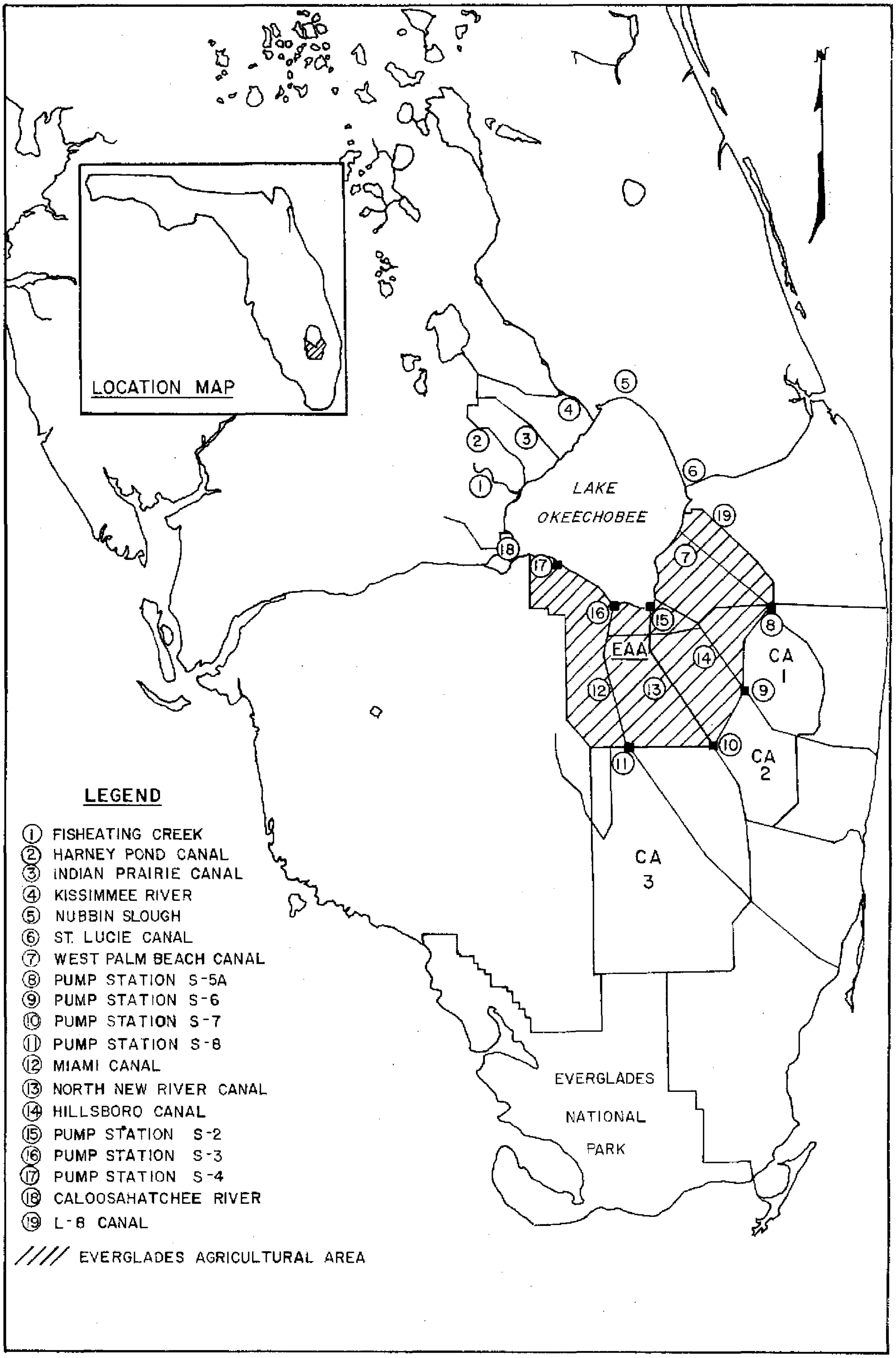


Figure I-1 EVERGLADES AGRICULTURAL AREA LOCATION MAP

(May to October) to protect crops and pastures from flood. Conversely irrigation water is required in the dry season (November to April) to maintain groundwater levels and soil moisture content.

The drainage/irrigation system of the EAA consistsof a network of canals, levees, control structures and pumps. The primary system was constructed or improved by the Corps of Engineers as part of the Central and Southern Florida Flood Control project and is currently operated and maintained by the South Florida Water Management District (SFWMD). The principal canals of the System are the West Palm Beach, Hillsboro, North New River and Miami Canals. During periods of excessive rainfall, pump stations S-2, S-3 and S-4, located on the south shore of Lake Okeechobee, pump excess agricultural drainage back into Lake Okeechobee from the northern one-third of the EAA. The southern two-thirds of the EAA are drained by pump stations S-5A, S-6, S-7 and S-8 which pump water into the Conservation Areas. Drainage must be accomplished by pumping throughout the EAA (pumpoff) since the water levels in both Lake Okeechobee and the Conservation Areas are usually above the optimum groundwater levels desired in the EAA. In the dry season irrigation water is released from Lake Okeechobee into the primary canals and is removed as needed by the various users. Connected to the primary system or directly to Lake Okeechobee are numerous private systems designed to provide flood protection and irrigation supplies to individual farm operations.

The findings of a 1969 U.S.G.S. study of Lake Okeechobee, which was funded by the SFWMD, indicated that the Lake was in an enriched condition (eutrophic) and that nonpoint sources (storm runoff) were a probable source of this enrichment (Joyner 1971). This study and growing awareness and interest by the SFWMD in environmental issues, especially water quality conditions, elicited a series of additional research and evaluation programs in an attempt to more clearly determine the condition of the Lake and the actual sources of enrichment (Davis and Marshall 1975, Department of Administration 1976). These studies indicated that the EAA is a principal source of nitrogen loadings to Lake Okeechobee. A preliminary study of the Vaughn Sugarcane Plantation conducted by the SFWMD in cooperation with the United States Sugar Corporation during 1973-74 confirmed that high nitrogen concentrations could be attributed to storm water pumpoff from these areas.

This report contains the results of three separate research projects undertaken by the South Florida Water Management District in an effort to gain a better understanding of the effects of forced agricultural drainage (pumpoff) on the water quality in the primary receiving canals and the subsequent impact on Lake Okeechobee of backpumping these canals.

PART II

SUMMARY AND CONCLUSIONS

Water Quality in the EAA Canals

Water quality fluctuations monitored in the primary drainage canals adjacent to the sites studied by BC&E/CH2M Hill (Figure III-1) could not be related to the specific type of agriculture taking place at the site. When the same data was grouped by canal and the results evaluated on a seasonal basis, the integrated effect of all the agricultural discharges on the canal became evident. Phosphorus, nitrite, and ammonia concentrations were higher in all canals except L-8 and dissolved oxygen concentrations were lower in the wet season when pumpages from the farms were most frequent.

The L-8 Canal, which does not receive large amounts of agricultural drainage, had a far better water quality in both wet and dry seasons. The seasonal water quality trends found in the primary agricultural canals were not as evident in the L-8 Canal and the seasonal trends that were discernible were opposite those in the other canals, i.e., the water quality was slightly better in the wet season than in the dry season.

The State standards (FAC Chapter 17-3) applicable to these Class III waters were not met at all times during this study. The standard for chloride was exceeded in the Hillsboro, L-6, Ocean and West Palm Beach Canals in both wet and dry seasons. During the dry season all canals except L-6 met the 5.0 mg/l average requirement of the dissolved oxygen standard, however, some scattered incidents below the 4.0 mg/l minimum occurred in all canals except L-8 and the Hillsboro. No values below those required in the standard were recorded in the L-8 Canal. Standards for conductivity were exceeded in every sample taken including those in the L-8 Canal.

Magnitude and Areal Extent of the Effects of Backpumping

The effects of backpumping on the water quality of Lake Okeechobee can be summarized by dividing the Lake into 4 zones starting at the pump stations and extending northward into the Lake. The first zone describes the quality of the water backpumped by S-2, S-3, and S-4. Pump station S-2 had the highest flow weighted total nitrogen (4.82 mg/l) and mean specific conductance (954 μmhos/cm) levels. Pump station S-4 had the highest flow weighted total phosphorus concentrations (0.256 mg/l) and lowest flow weighted total nitrogen concentration (2.56 mg/l) and specific conductance levels (782 μmhos/cm). Pump station S-3 had water quality characteristics which were between those of S-2 and S-4 but more closely resembling S-2. The quality characteristics of S-2, S-3, and S-4 taken as a group are summarized in Table II-1. As with the pump stations taken individually, the outstanding characteristics of backpumped waters in general were the very high flow weighted total nitrogen concentration (4.69 mg/l), high specific conductance levels (848 μmhos/cm), and low turbidity levels (4.4 JTU's). Another distinguishing feature was the disproportionately high flow weighted inorganic nitrogen concentration (1.83 mg/l). The average dissolved oxygen concentration in the backpumped waters was 5.9 mg/l .

The area of the Lake most noticeably impacted by backpumping was the Rim Canal zone which serves as the immediate receiving body. Total nitrogen concentrations were high in the Rim Canal during backpumping (3.03 mg/l) but were 35 percent lower than at the 3 pump stations. A more significant change was noted in the inorganic nitrogen fraction which decreased 50 percent in the Rim Canal as compared to the pump stations. Specific conductance and phosphorus decreased only slightly, 7 and 20 percent respectively, as compared to the pump stations. The mean dissolved oxygen concentration decreased, when compared to the pump stations, to 4.9 mg/l in the Rim Canal. There were also significant differences in water quality in the Rim Canal between backpumping periods and

TABLE II-1. WATER QUALITY CHARACTERISTICS OF DIFFERENT ZONES IN LAKE OKEECHOBEE (APRIL 1976 THROUGH AUGUST 1977)

Station Groups	Total N Mean conc. mg/l as N	Inorganic N Mean conc. mg/l as N	Organic N Mean conc. mg/l as N	Total P Mean conc. mg/l as P	Ortho P Mean conc. mg/l as P	Dissolved Oxygen Mean conc. mg/l	Specific Cond. Mean conc. µmhos/cm	Turbidity Mean conc. JTU
S-2, S-3, S-4 [1]	[2]	[2]	[2]	[2]	[2]	[3]	[3]	[3]
Backpumping	4.69	1.83	2.77	.103	.064	5.9	848	4.4
Rim Canal Stations								
Backpumping	3.03	.93	1.99	.083	.047	4.5	790	4.1
No backpumping	2.08	.19	1.89	.048	.017	6.4	782	5.2
Littoral Zone Stations								
Backpumping	2.20	.41	1.80	.041	.017	7.0	745	5.7
No backpumping	2.04	.19	1.85	.065	.017	8.1	729	14.2
Limnetic Zone Stations								
Backpumping	1.63	.10	1.53	.050	.010	8.0	669	12.1

[1] S-2, S-3, and S-4 drain the North New River and Hillsboro Canals, the Miami Canal and Canal 20, respectively

[2] Flow weighted concentrations

[3] Time weighted concentrations

non-backpumping periods. Nitrogen, phosphorus, and conductivity levels were all higher during backpumping periods, while dissolved oxygen concentrations were lower.

Further away from the pump stations in the South Bay littoral zone, nitrogen, phosphorus, and specific conductivity levels during backpumping continued to decrease although they still remained slightly higher than background (non-backpumping) levels. Mean dissolved oxygen concentrations increased to 7.0 mg/l which was only slightly below the 8.1 mg/l average concentration during non-backpumping periods. In the limnetic zone of the Lake, nitrogen, phosphorus, and specific conductance decreased further to levels considered normal for the Lake (Davis and Marshall 1975). Based upon the available data the immediate zone of influence of backpumping appears not to extend beyond South Bay to the north (4 miles from S-2) and past Moore Haven to the west. The eastern influence of backpumping extends at least to Pahokee.

Evaluation of the Effects of Backpumping

The impact of backpumping the Everglades Agricultural Area (EAA) drainage canals into Lake Okeechobee was evaluated from two perspectives: (1) in terms of Florida water quality standards (Florida Administrative Code Chapter 17-3) as they apply to receiving waters and (2) in the framework of nutrient loading rates as they relate to trophic state. Evaluation of backpumping in terms of FAC Chapter 17-3 water quality standards involved defining the receiving waters and the delineation of a mixing zone. Natural background water quality levels were also examined since Chapter 17-3 recognizes exemptions from the standards if certain waters, due to natural causes, do not fall within the prescribed limitations. After eliminating those parameters which "naturally" exceed the FAC standards, only pH, chloride, and dissolved oxygen remained to be further evaluated. Since the limnetic zone of the Lake was considered as the receiving water, an assumption was made that tributary inflow into the Rim Canal should be allowed to contact the limnetic waters before FAC standards were applied. Considering chloride and pH, the Lake exhibited no violations attributable to backpumping. Dissolved oxygen values below the 4.0 mg/l standard were measured during backpumping although there were no violations of the dissolved oxygen standard after the backpumped waters were given an opportunity to mix with water in the Lake outside of the Rim Canal. Backpumping of EAA pumpoff, therefore, does not appear to violate FAC Chapter 17-3 water quality standards for conductivity, pH, iron, chlorides, and dissolved oxygen based on the available data.

Mean annual loadings for the major inflows to Lake Okeechobee were calculated for the period May 1973 to May 1977. The EAA drains 12 percent (427 sq. miles) of the Lake Okeechobee watershed and supplies 11 percent of the surface water inflow (378 X 10^3 acre-ft). However, due to the quality of the discharge water, the EAA basin accounted for 15 percent (88 tons) of the phosphorus input and 35 percent (2,798 tons) of the nitrogen input. The surface inflow and nitrogen loading from the EAA represented the highest areal export rates (869 acre-ft /sq mile and 20.5 lbs nitrogen/acre, respectively) of any major basin tributary to the Lake. The phosphorus areal export rate of 0.64 lbs/acre was the second highest of any major tributary.

Permissible and dangerous nutrient loading rate criteria developed by Shannon and Brezonik (1972) were employed as a method by which to evaluate the effect of the current nutrient loading rates on the trophic state of Lake Okeechobee. Based on their criteria, the current phosphorus loading rate of 596 tons per year is 10 percent above the permissible loading rate (540 tons/yr) and below the dangerous rate. The current nitrogen loading rate of 7,907 tons per year is 17 percent above the dangerous loading rate (6,556 tons/year) and 51 percent above the permissible loading rate (3,857 tons/yr). Nutrient allocations based upon drainage basin areas were calculated for phosphorus at the permissible level (0.38 lbs/acre drained-yr) and for nitrogen at the permissible (1.80 lbs/acre drained-yr) and dangerous (4.09 lbs/acre drained-yr) levels. Based upon these allocations, the EAA is 42 percent above its permissible phosphorus allocation, 80 percent above its permissible nitrogen allocation and 91 percent above its dangerous nitrogen allocation.

PART III

WATER QUALITY IN THE EVERGLADES AGRICULTURAL AREA CANALS

This study and the study sponsored by the Florida Sugar Cane League and conducted by BC&E/CH2M Hill,Inc. marks the first concentrated efforts at developing information on the quality of water discharged from farming sites representing the various agricultural practices in the muck soils of the Everglades Agricultural Area (EAA). Simultaneous with the detailed site studies of BC&E/CH2M Hill a study of the receiving canals was conducted by the South Florida Water Management District (SFWMD). The purpose of this study was to determine the impact of the discharges from each of the farm sites, studied by BC&E, on the water quality in the primary receiving canals, and to evaluate the feasibility of monitoring agricultural discharges by the sampling of the receiving waters.

MATERIALS AND METHODS

Sampling Locations and Frequencies

The design of the SFWMD study included the collection of water samples from sampling stations located in the primary receiving canals adjacent to the intensive and checkpoint study sites (Fig. III-1). These stations (Figs. III-2 through III-8) were used to monitor changes in the canal water quality above and below the discharge points from agricultural study sites. The reversible flow regimes in the canals made it necessary to select downstream stations on either side of the discharge. Two stations, located approximately 100 yards on either side of the discharge, were monitored irregardless of the direction of flow, however, these stations were coded as upstream or downstream depending on the direction of flow. Biweekly samples were collected at the three intensive sites and monthly samples at the checkpoint sites during the wet season (June - September); dry

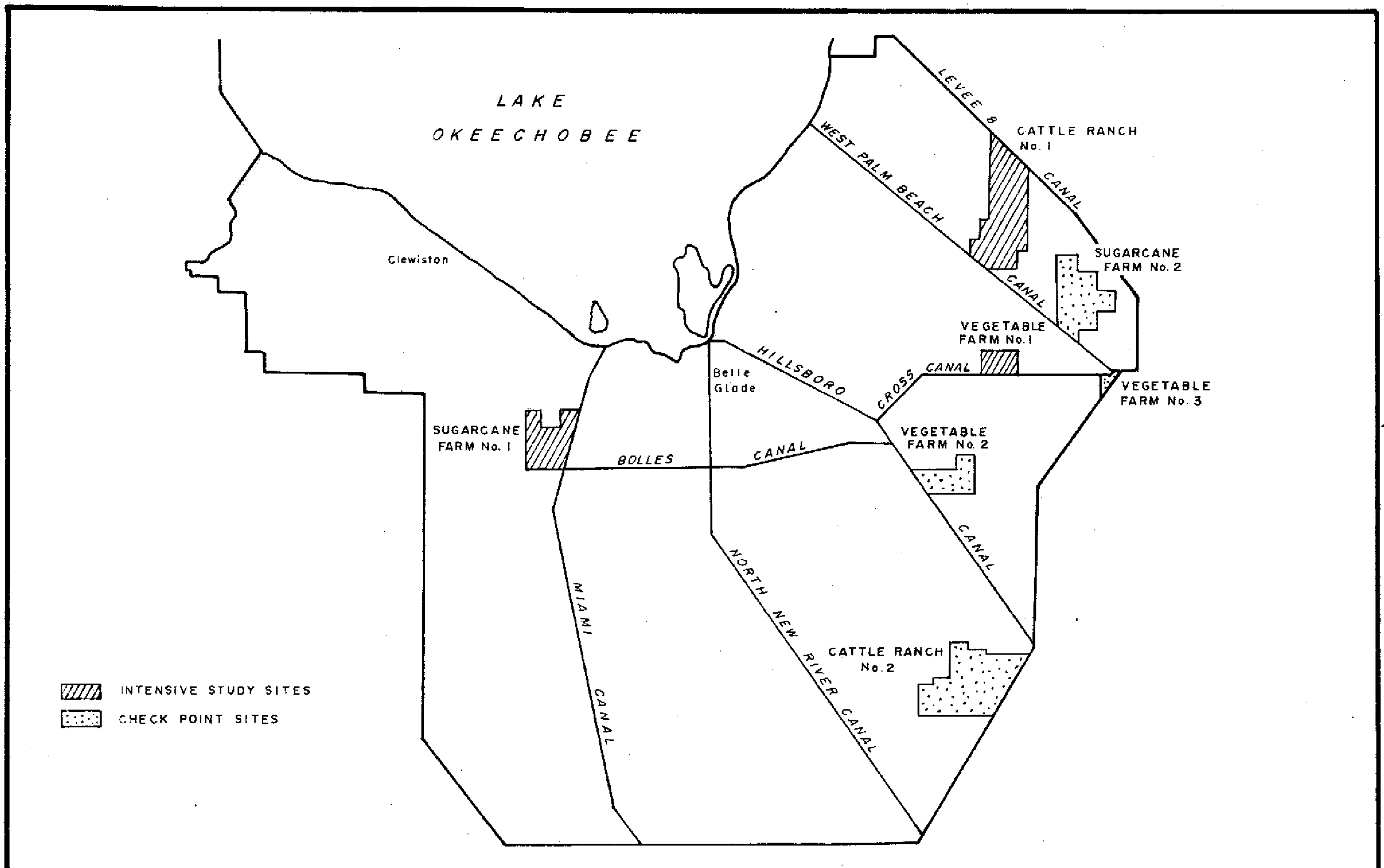


Figure III-1 LOCATION OF STUDY SITES. (ADAPTED FROM SHANNON 1977)

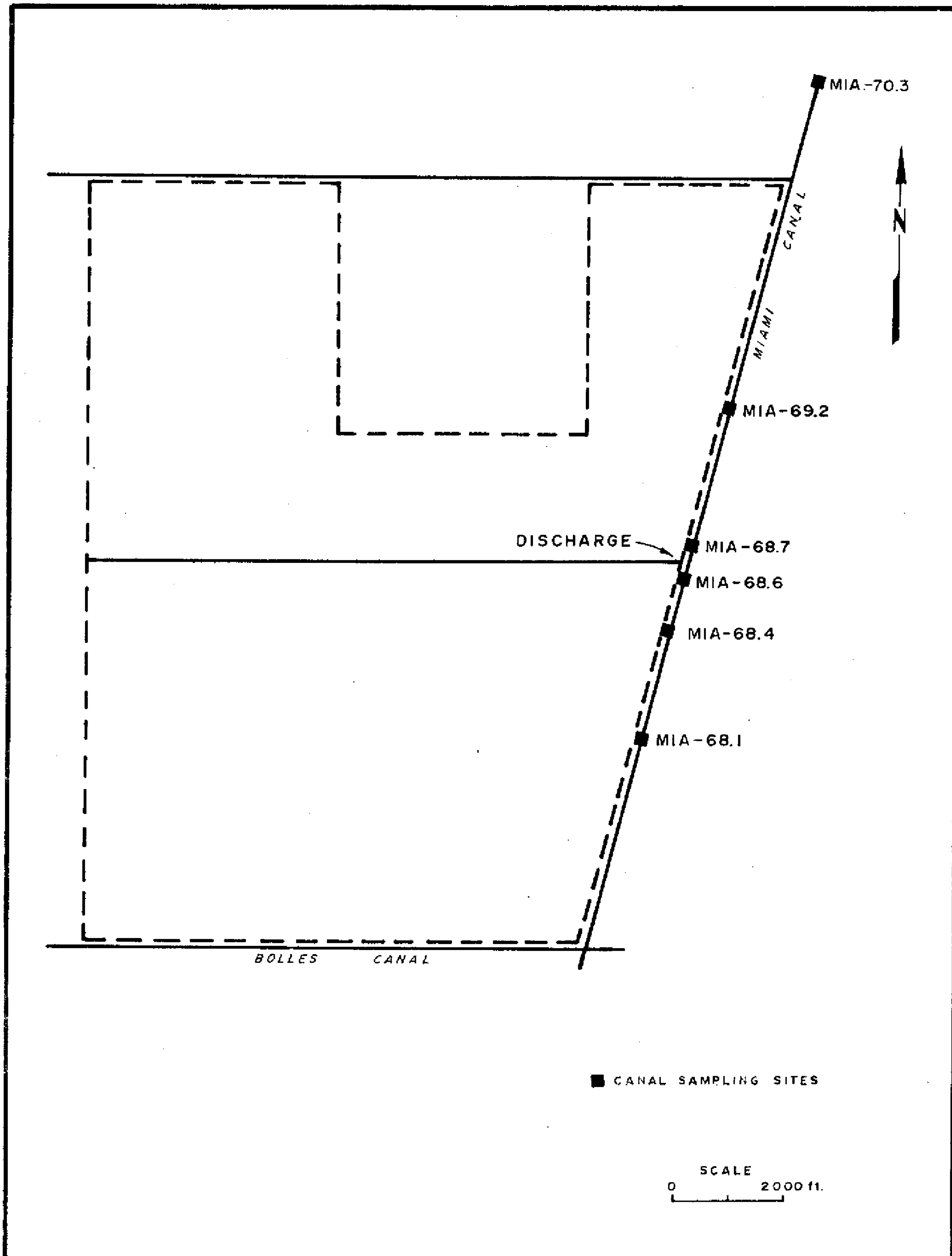


Figure III-2 SUGARCANE FARM No. 1

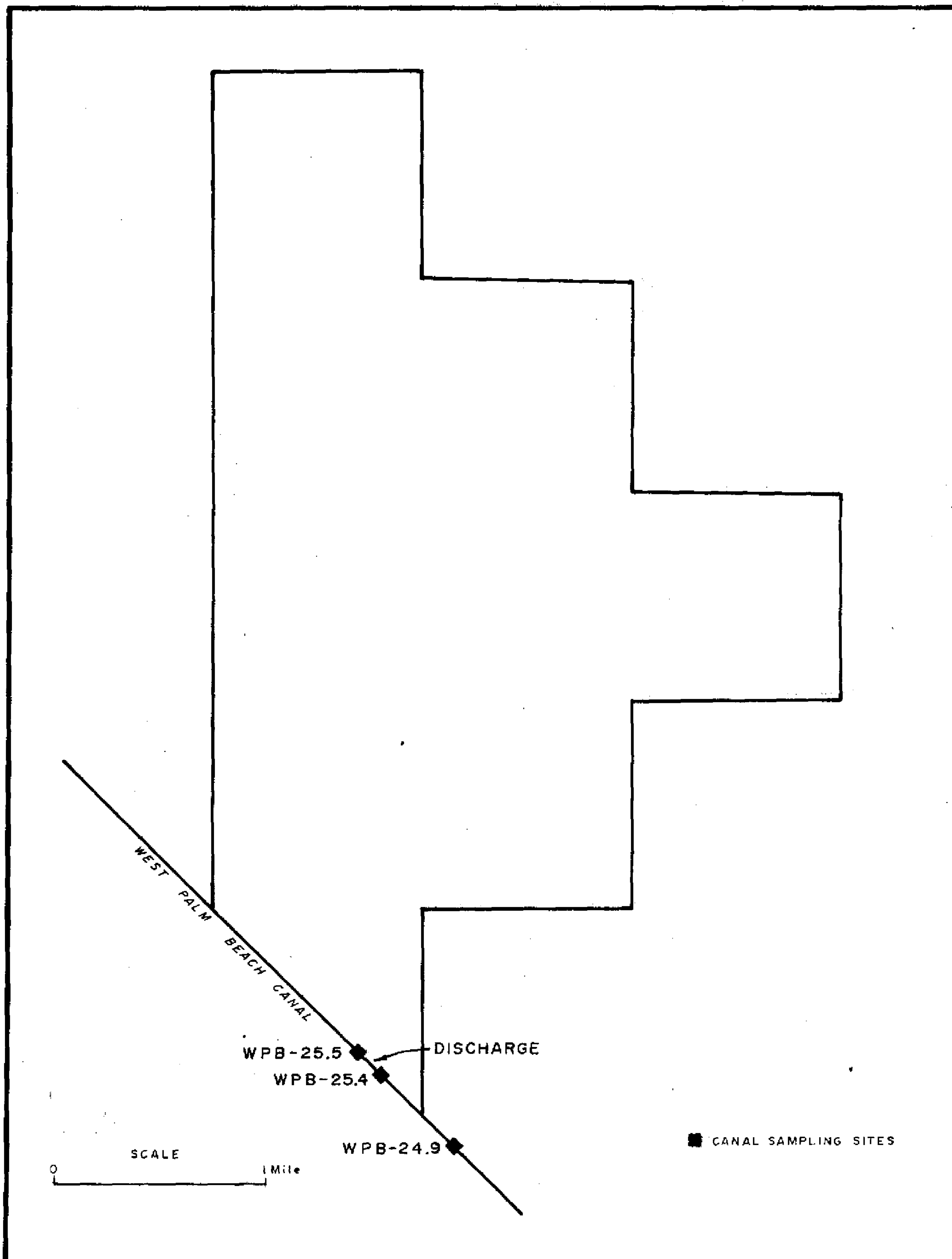


Figure III-3 SUGARCANE FARM No. 2

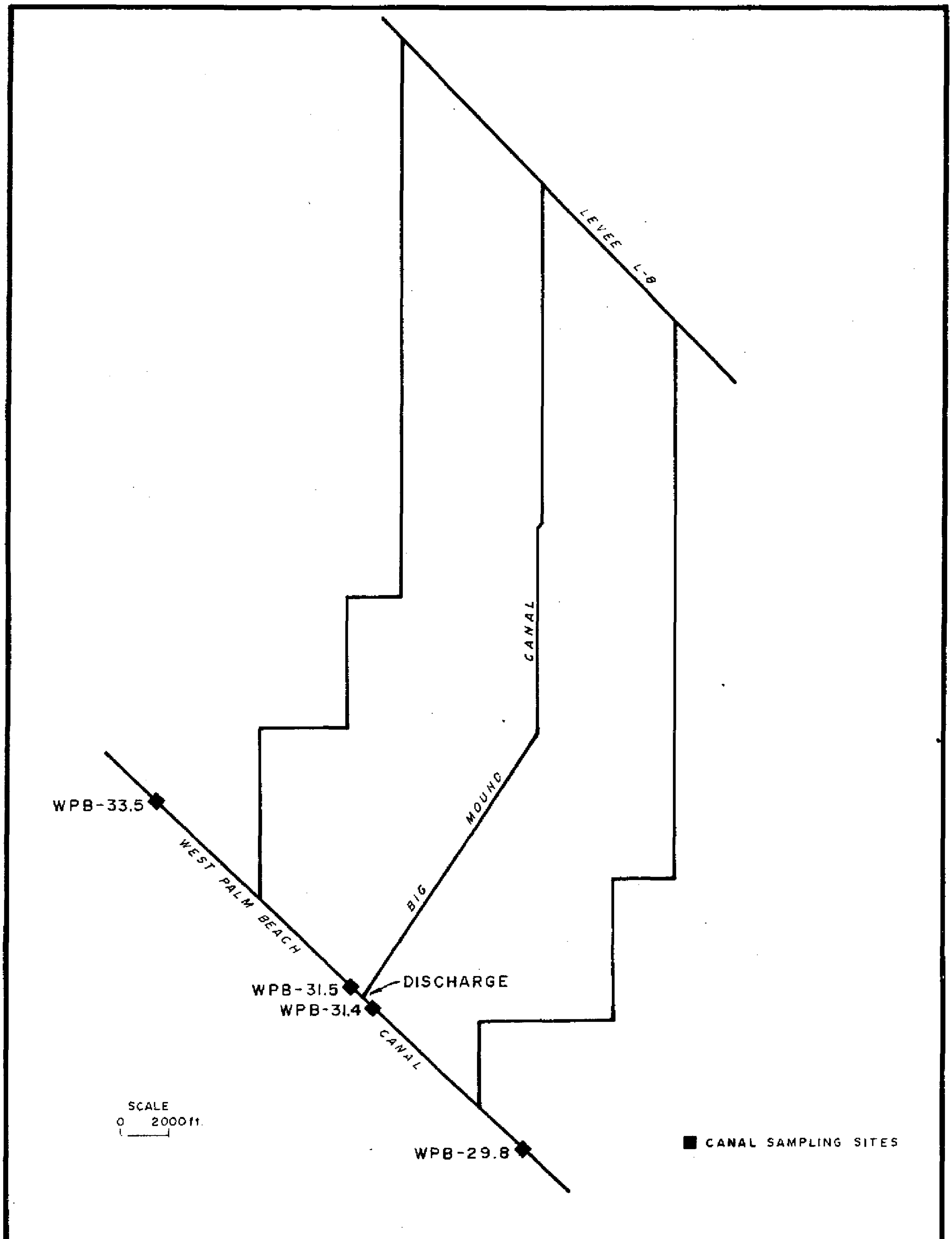


Figure III-4 CATTLE RANCH No. 1

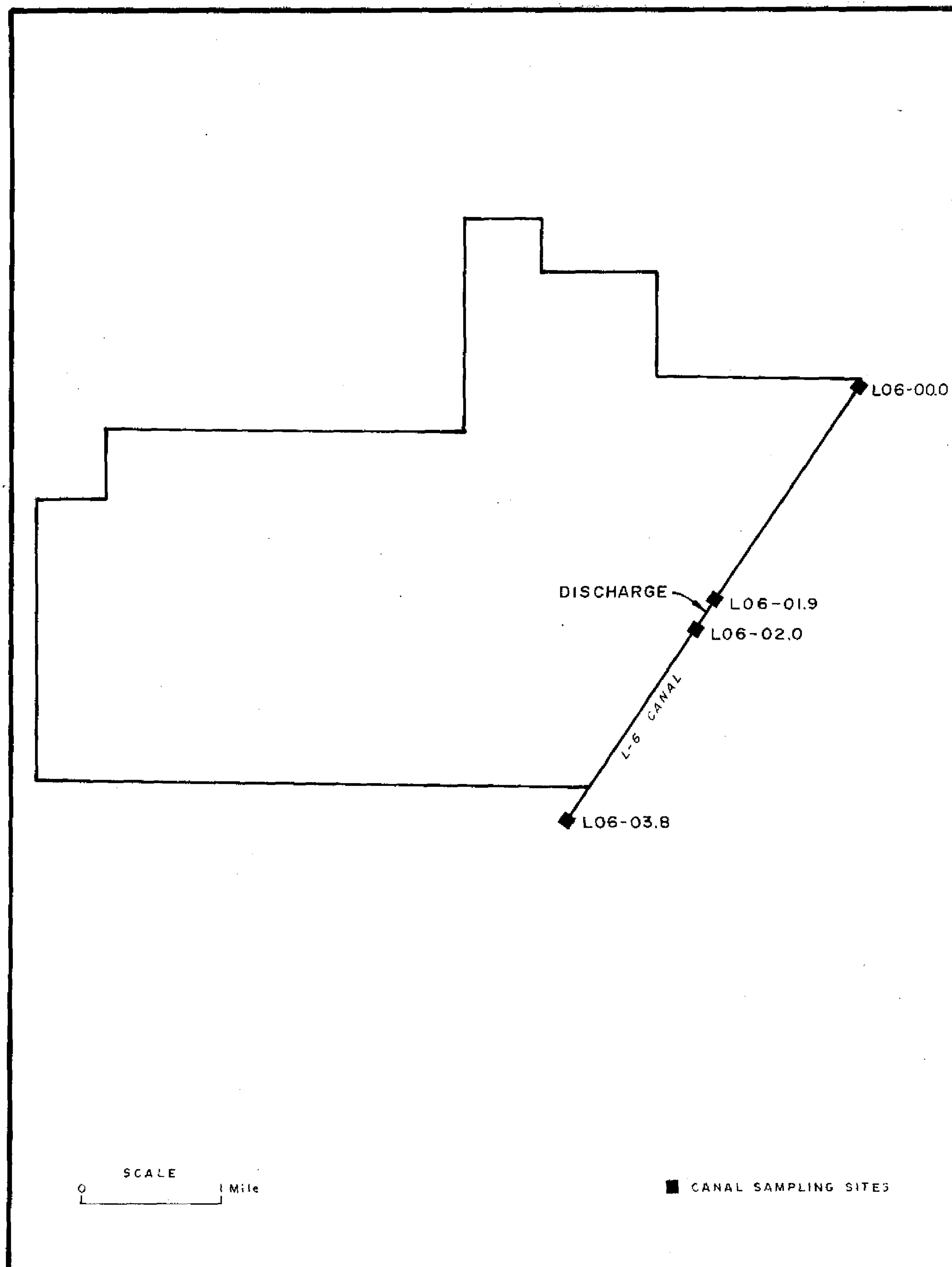


Figure III-5 CATTLE RANCH No. 2

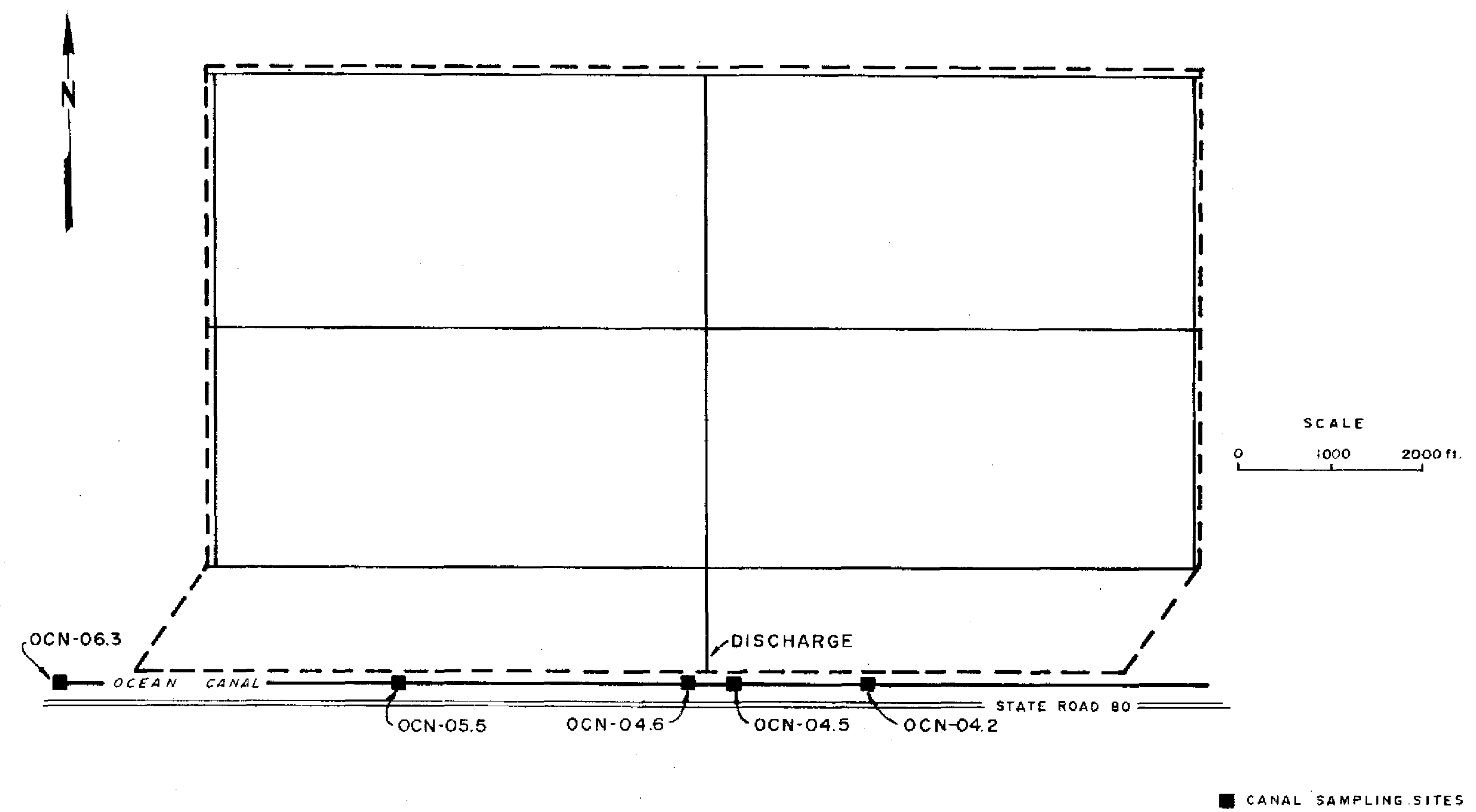


Figure III-6 VEGETABLE FARM No. 1

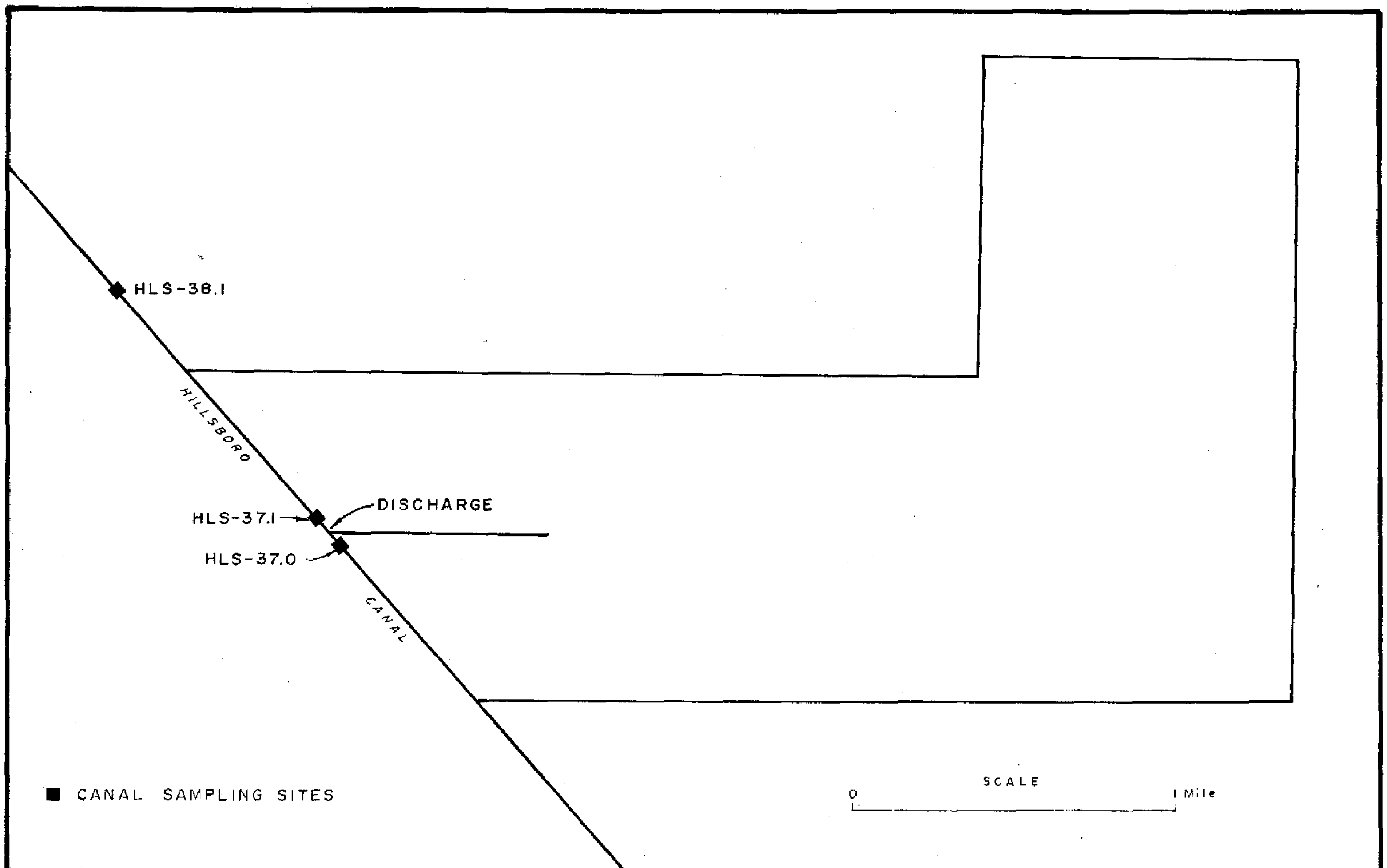


Figure III-7 VEGETABLE FARM No. 2

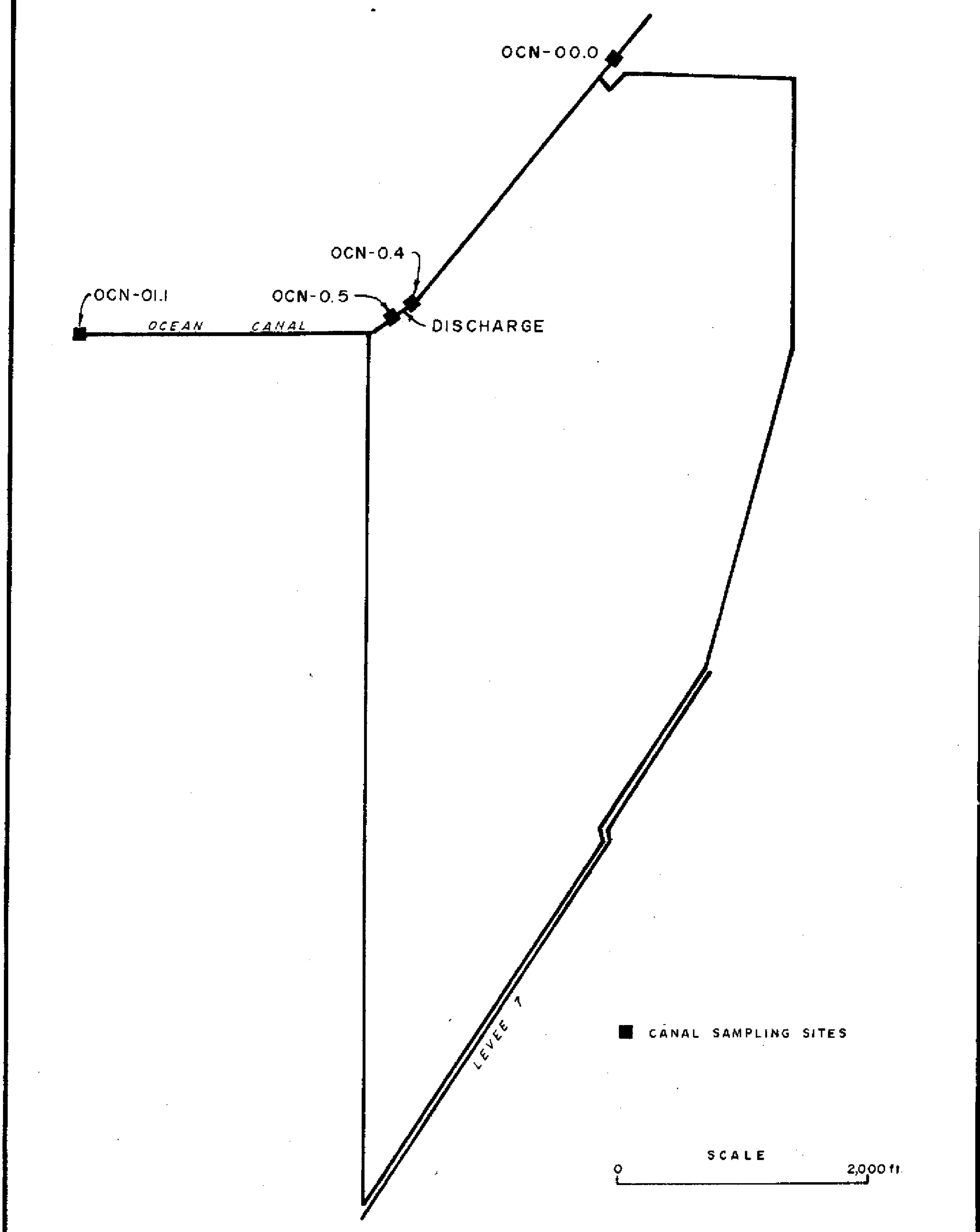


Figure III-8 VEGETABLE FARM No. 3

season sampling was done monthly at the intensive sites and bimonthly at the checkpoint sites.

This sampling program was conducted for a 10 month period beginning June 1, 1976 and ending April 11, 1977. The early wet season data collected for this study was obtained prior to the beginning of the Sugar Cane League's program in July and consequently there is a lack of the discharge quality and quantity data, provided by BC&E/CH2M Hill, for approximately 2 of the 4 months of the 1976 wet season. The sample collection phase of this project was terminated in April 1977 based on a preliminary review of the 1976 wet season data because it was felt little would be gained by continuation. This analysis for this report, however, indicates that useful information would have been gained by continuing the project through the 1977 wet season.

Sampling and Analytical Methods

Surface water samples were collected from all study site stations with a 2.2 liter PVC Niskin(R) bottle. Water samples collected for dissolved nutrient and major ion analyses were filtered through a 0.45 micron Nuclepore(R) membrane filter. Samples collected for trace metal analysis were acidified with concentrated nitric acid (2 drops/60 ml) subsequent to filtration. Unfiltered aliquots were also collected for total nutrient analyses. All samples were stored in polyethylene bottles, on ice in the dark, until they were transported back to the laboratory. In the laboratory, the samples were kept at 4° C, in the dark, prior to analysis. Analysis for routine water quality parameters commenced within one week of sample collection.

Laboratory analysis of the water samples was routinely performed for the following parameters:

1. Dissolved nutrients (nitrate, nitrite, ammonia and ortho-phosphorus).
2. Total phosphorus and total Kjeldahl nitrogen.

3. Major ions (sodium, potassium, magnesium, chloride, calcium, alkalinity and sulfate).

4. Trace metals (total and dissolved iron).

5. Total suspended solids and turbidity.

The analytical chemistry methods used in this study were either recommended or approved by the Environmental Protection Agency or the American Public Health Association (Appendix A). Most analyses were performed on either a Technicon Industrial Systems II AutoAnalyzer(R) or a Perkin Elmer Model 306(R) Atomic Absorption Spectrophotometer.

Field data (dissolved oxygen, temperature, specific conductivity and pH) were collected simultaneously with the water samples using a Hydrolab Surveyor II(R).

Evaluation Methods

The data gathered during the sampling program was evaluated on both a site specific and on an entire canal basis. The site specific evaluation consists of a comparison of the upstream and downstream water quality at each of the seven study sites (Figs. III-2 through III-8). This upstream and downstream water quality data is grouped under two categories, discharge and no discharge, depending on whether discharges from the sites were or were not occurring at the time of sample collection. Upstream and downstream averages for all parameters for both discharge and no discharge categories are used to evaluate the impact of the drainage from each site on the receiving canal water quality.

Data from each of the sampling stations was also grouped by canal (i.e. Hillsboro, L-6, Miami, Ocean, and West Palm Beach) and used to calculate average values for each of the canals. A further breakdown was made of this data into wet season and dry season categories to evaluate the integrated effect of the heavy wet season drainages on the canal water quality. The wet season category includes all samples collected from June 1976 to September 1976; the period which hydrological records show to correspond to the heaviest backpumping from the farms. The dry season category includes those samples collected from October 1976 to April 1977.

Data from samples collected at the southern end of the L-8 canal was broken down into the same wet/dry season categories and included in the evaluation for a comparison with the other canal data. The L-8 canal data was included because the canal borders the muck farming area on the north and runs a course nearly parallel to that of the West Palm Beach Canal. Unlike the other canals in this study, L-8 does not receive the heavy agricultural drainages and is used as a control to give some indication of natural background water quality of the canals in this area.

The canal data was evaluated a third way, in addition to the seasonal and L-8 comparisons. Since the canals sampled in this study are classified as Class III waters, "suitable for recreation and the propagation and management of fish and wildlife"; and, as such, are subject to the standards for Class III waters, the canal water quality was evaluated in light of the standards as set forth in the Chapter 17-3 Rules of the Florida Administrative Code (FAC). All parameters measured which have an applicable standard in the Chapter 17-3 Rules were compared with that standard using the seasonal breakdown.

RESULTS AND DISCUSSION

This section contains both the presentation and discussion of the water quality data collected during this study. The presentation of the site specific data is discussed first and followed by sections discussing seasonal comparisons of the canal data, comparisons of the study canals with L-8 and finally the evaluation of the canal data with respect to the state standards.

Sugarcane Sites

The chemistry data collected during discharges from sugarcane sites #I and #2 (Tables III-1 and III-2) does not exhibit consistent changes from the upstream to downstream stations which could be called characteristic impacts of sugarcane farm runoff. As the following presentation of data indicates, most of the water quality changes that occurred at the sugarcane #1 site were either nonexistent or reversed at sugarcane site #2.

Phosphorus concentrations in the Miami Canal adjacent to sugarcane site #1 were considerably lower (upstream and downstream) during discharges than they were adjacent to site #2 in the West Palm Beach Canal. At site #2, a slight reduction (0.02 mg/l) in the total phosphorus concentration did occur below the discharge, although ortho-phosphate concentrations remained essentially unchanged. Total phosphorus concentrations at sugarcane site #1 did not decrease downstream probably due to the lower ambient concentrations present in the Miami Canal when the samples were collected. Phosphorus concentrations, upstream and downstream of site #2 during periods of no discharge averaged less than the comparable values from the Miami Canal.

The Miami Canal and West Palm Beach canals each differed somewhat on the most abundant species of inorganic nitrogen present during periods of discharge. Nitrate was predominant in the Miami Canal whereas ammonia was the predominant form of

TABLE III-1. AVERAGE CONSTITUENT CONCENTRATIONS FROM THE MIAMI CANAL ADJACENT TO SUGARCANE SITE #1

	Discharge		No Discharge	
Parameter *	Upstream	Downstream	Upstream	Downstream
TP	0.028	0.024	0.170	0.155
OP	0.004	0.006	0.145	0.131
TDP	0.017	0.016	0.182	0.141
TN	6.48	4.64	4.63	4.54
NO_3	1.722	1.378	1.904	1.901
NO_2	0.084	0.054	0.042	0.043
NH_4	0.06	0.08	0.119	0.11
TKN	4.67	3.21	2.68	2.59
Na	76.6	76.0	72.7	72.2
K	7.2	6.4	5.0	5.0
Ca	124.7	119.3	105.6	105.5
Mg	29.6	29.3	25.8	25.9
Cl	119.8	119.4	114.9	114.0
SO_4	102.7	100.6	126.8	127.4
Alkalinity (meq/l)	6.6	6.4	5.6	5.4
Hardness (as $CaCO_3$)	423.5	456.4	378.7	382.7
Turbidity (JTU)	2.4	3.2	2.8	2.8
Color (PCU)	95.0	105.0	129.4	127.4
Copper (μg/l)	.6	2.7	1.8	2.0

* All units are mg/l unless otherwise noted

TABLE III-2. AVERAGE CONSTITUENT CONCENTRATIONS FROM THE WEST PALM BEACH CANAL ADJACENT TO SUGARCANE SITE #2

	Discharge		No Discharge	
Parameter*	Upstream	Downstream	Upstream	Downstream
TP	0.108	0.089	0.091	0.124
OP	0.058	0.060	0.044	0.049
TDP	0.086	0.077	0.061	0.076
TN	4.82	5.81	4.16	4.11
NO_3	0.684	0.798	0.819	0.766
NO_2	0.104	0.104	0.083	0.083
NH_4	1.32	1.41	0.58	0.57
TKN	4.38	4.91	3.26	3.26
Na	176.0	175.9	129.6	125.6
K	4.6	4.0	6.6	6.7
Ca	124.9	129.1	94.2	94.1
Mg	46.2	45.1	28.4	28.7
Cl	236.6	242.1	193.5	193.3
SO_4	127.0	127.4	85.5	80.5
Alkalinity (meq/l)	7.5	7.3	6.1	6.1
Hardness (as $CaCO_3$)	460.4	451.1	366.0	362.6
Turbidity (JTU)	5.8	5.7	5.7	6.6
Color (PCU)	220.0	193.2	141.8	130.8
Copper (µg/l)	0.4	0.4	2.1	2.2

* All units are mg/l unless otherwise noted

inorganic nitrogen in the West Palm Beach Canal. Nitrate and nitrite concentrations decreased downstream of site #1 by 0.34 and 0.03 mg/l respectively, but at site #2 an increase of .11 mg/l in the nitrate concentration occurred. The difference in the water quality impact between the two discharges (i.e. decreased nitrate concentrations below site #1 and increased nitrate concentrations below site #2) is dependent on the background nitrate concentrations and not the concentrations in the discharge waters because Shannon (1977) reported nitrate/nitrite concentrations in the site #1 discharge more than double those at site #2. Despite differences in the background ammonia concentrations in the Miami and West Palm Beach Canals, discharges from both sugarcane sites resulted in somewhat higher ammonia concentrations downstream. Concentrations of ammonia in the discharge waters from sites #1 and #2 (Shannon 1977) were both considerably higher than those measured in the canals in agreement with the changes observed in the canals. Average total nitrogen concentrations in the West Palm Beach Canal at site #2 increased by 1 mg/l below the discharge, whereas at site #1 the average downstream concentrations were 1.8 mg/l less than upstream. These results are somewhat surprising since the average total nitrogen concentration in the discharge water at site #1 was considerably higher than at site #2 (Shannon 1977).

The concentrations of major constituents (i.e. sodium, chloride, potassium, calcium, magnesium and sulfate) were generally higher in both the Miami and West Palm Beach Canals when discharges from the sugarcane #1 and #2 sites were occurring. Despite the higher concentrations measured during the discharge periods most of the major constituents actually decreased in concentration below the discharge. The exceptions to this were a slight increase in sulfate concentrations downstream at site #1 and increases in calcium and chloride downstream of site #2. Large differences in the sodium and chloride concentrations were evident between the two canals; the concentrations in the West Palm Beach Canal being nearly double those in the Miami Canal during the discharge periods. This difference is largely the result of the different groundwater quality in the two areas. Shannon (1977) reported much lower dissolved solids levels in the groundwater at sugarcane site #1 than at cattle ranch #1 which is near sugarcane site #2.

Cattle Ranch Sites

Cattle ranch sites #1 and #2 were sampled during the discharge events only three times throughout the entire study. These limited results (Tables III-3 & III-4) do indicate, however, some interesting trends with respect to the concentrations of phosphorus and major constituents.

Total phosphorus concentrations downstream of both cattle ranch discharges increased relative to the background concentrations upstream. The increase in the total phosphorus concentrations downstream of the cattle ranch discharges was greater (.025 mg/l) at ranch #1 than at ranch #2 (0.007 mg/l) despite the moderately higher total phosphorus concentrations in the West Palm Beach Canal adjacent to ranch #1. The discharge water quality from the cattle sites as reported by Shannon (1977) does not indicate unusually high phosphorus concentrations when compared to the other agricultural sites, however, total phosphorus concentrations in the cattle ranch discharge water did average 0.04 to 0.09 mg/l higher than in the adjacent canals.

Despite relatively low levels of inorganic nitrogen present in the discharges from cattle sites #1 and #2 there was a small increase detectable in some of the inorganic nitrogen species downstream from the discharges. Average ammonia concentrations increased downstream of the site #2 discharge by nearly .17 mg/l although both nitrite, and Kjeldahl nitrogen concentrations decreased. At cattle ranch #1 all forms of nitrogen except nitrite decreased in concentration below the discharge; nitrite concentrations were slightly higher downstream.

The data collected during discharges from the two cattle ranch sites indicates that both discharges tended to decrease concentrations of most of the major

TABLE III-3. AVERAGE CONSTITUENT CONCENTRATIONS FROM THE WEST PALM BEACH CANAL ADJACENT TO CATTLE RANCH #1

	Discharge		No Discharge	
Parameter*	Upstream	Downstream	Upstream	Downstream
TP	0.124	0.149	0.138	0.110
OP	0.090	0.118	0.069	0.061
TDP	0.111	0.135	0.082	0.084
TN	7.27	6.76	4.57	4.16
NO_3	1.667	1.328	0.748	0.704
NO_2	0.143	0.146	0.095	0.094
NH_4	1.50	1.42	0.675	0.57
TKN	5.46	5.29	3.72	3.36
Na	155.9	143.2	139.5	132.2
K	9.0	9.2	7.0	7.5
Ca	138.3	126.6	100.4	96.9
Mg	40.3	35.8	34.4	32.4
Cl	175.4	164.6	196.8	194.9
SO_4	122.3	107.6	177.8	153.4
Alkalinity (meq/l)	6.0	5.9	6.6	6.4
Hardness (as $CaCO_3$)	518.2	507.7	414.0	403.4
Turbidity (JTU)	3.6	4.4	5.8	5.6
Color (PCU)	283.5	261.5	183.3	164.9
Copper (μg/l)	2.2	1.4	1.3	2.2

*All units are mg/l unless otherwise noted

TABLE III-4. AVERAGE CONSTITUENT CONCENTRATIONS FROM THE L-6 CANAL ADJACENT TO CATTLE RANCH # 2

	Discharge		No Discharge	
Parameter *	Upstream	Downstream	Upstream	Downstream
TP	0.033	0.040	0.074	0.081
OP	0.017	0.019	0.038	0.030
TDP	0.020	0.027	0.047	0.045
TN	-	3.21	3.02	3.13
NO_3	-	0.149	0.587	0.516
NO_2	0.098	0.052	0.349	0.346
NH_4	0.77	0.94	0.50	0.49
TKN	3.30	3.01	2.86	2.98
Na	146.0	138.2	132.9	131.4
K	7.4	7.0	6.2	6.4
Ca	109.5	107.0	96.2	94.3
Mg	39.1	40.1	33.1	32.8
Cl	219.2	194.8	200.6	197.8
SO_4	23.7	13.8	54.5	46.4
Alkalinity (meq/l)	8.5	8.9	7.1	7.0
Hardness (as $CaCO_3$)	440.2	438.4	383.1	388.0
Turbidity (JTU)	2.4	2.8	1.5	1.4
Color (PCU)	150.0	131.0	132.2	128.6
Copper (μg/l)	1.8	.6	1.1	1.7

*All units are mg/l unless otherwise noted

constituents in the canals; two cations, potassium and magnesium, were the exception. At ranch #1 a slight increase in the potassium concentrations was observed downstream. Below ranch #2 potassium concentrations were lower than upstream, however, a slight increase in magnesium concentration occurred. Despite the fair distance between the two cattle ranch sites, the canal water quality data indicates there is very little difference in the major constituent concentrations in the groundwater at the two sites.

Vegetable Farm Sites

Results from the three vegetable farm sites show a gradation of impact on the receiving waters, ranging from considerable impact at site #1 to very little impact at site #3. The water chemistry results, excluding dissolved oxygen, pH, and conductivity measured at the three vegetable farms are presented in Tables III-5, III-6 and III-7. Out of the nineteen parameters listed in these tables twelve increased in concentration downstream of the site #1 while only one increased below the discharge from site #3.

Downstream concentrations of both total and total dissolved phosphorus increased substantially at vegetable farm #1, but decreased below the discharges of both site #2 and #3. This finding is somewhat surprising since the discharge quality data (Shannon 1977) indicates similar phosphorus concentrations at sites #1 and #2 with somewhat lower concentrations at site #3. The reason for the discrepancy between these results and those presented by Shannon may be due to the lack of sensitivity in the receiving water sampling design which is compounded by the continually varying water quality in the canals. The ambient water quality in the canal is obviously an important factor when using this method to determine the impact of the discharges since the discharge must increase concentrations above ambient levels before the impact is detectable.

The results for nitrogen indicate general decreases in concentration at the downstream stations when discharges from the three vegetable farms were occurring.

TABLE III-5. AVERAGE CONSTITUENT CONCENTRATIONS FROM THE OCEAN CANAL ADJACENT TO VEGETABLE SITE # 1

	Discharge		No Discharge	
Parameter*	Upstream	Downstream	Upstream	Downstream
TP	0.126	0.152	0.387	0.118
OP	0.108	0.120	0.271	0.079
TDP	0.112	0.140	0.338	0.100
TN	6.90	6.56	3.12	3.61
NO_3	1.984	1.971	0.500	0.553
NO_2	0.380	0.407	0.042	0.061
NH_4	0.87	0.84	0.56	0.44
TKN	4.88	4.63	2.58	3.61
Na	245.8	252.8	189.9	174.9
K	10.8	12.1	10.8	7.4
Ca	117.0	115.2	84.2	87.7
Mg	49.8	50.6	32.1	34.7
Cl	301.7	307.5	276.0	273.4
SO_4	94.8	103.8	145.6	146.9
Alkalinity(meq/l)	8.2	8.2	6.2	7.0
Hardness (as $CaCO_3$)	502.0	510.7	346.9	397.9
Turbidity (JTU)	2.6	3.0	3.7	2.7
Color (PCU)	273.2	263.9	120.1	144.4
Copper (μg/l)	1.4	1.9	2.0	2.5

*All units are mg/l unless otherwise noted

TABLE III-6. AVERAGE CONSTITUENT CONCENTRATIONS FROM THE HILLSBORO CANAL ADJACENT TO VEGETABLE SITE #2

	Discharge		No Discharge	
Parameter *	Upstream	Downstream	Upstream	Downstream
TP	0.164	0.156	0.116	0.109
OP	0.128	0.116	0.066	0.066
TDP	0.144	0.142	0.093	0.091
TN	4.82	4.51	4.31	4.31
NO_3	0.558	0.384	0.643	0.636
NO_2	0.064	0.050	0.075	0.071
NH_4	0.58	0.54	0.48	0.45
TKN	4.20	4.07	3.59	3.60
Na	187.0	190.0	142.9	142.3
K	5.0	5.7	8.6	9.3
Ca	107.0	108.2	105.8	106.2
Mg	40.5	44.5	40.1	39.5
Cl	248.8	250.0	180.5	209.5
SO_4	42.8	36.0	60.8	61.3
Alkalinity(meq/l)	8.3	7.5	8.1	8.1
Hardness as ($CaCO_3$)	442.2	458.3	454.9	453.6
Turbidity (JTU)	12.3	5.6	2.7	2.6
Color (PCU)	201.5	202.0	172.0	186.8
Copper (μg/l)	1.6	1.7	1.0	1.0

*All units are mg/l unless otherwise noted

TABLE III-7. AVERAGE CONSTITUENT CONCENTRATIONS IN THE OCEAN CANAL ADJACENT TO VEGETABLE SITE #3

	Discharge		No Discharge	
Parameter*	Upstream	Downstream	Upstream	Downstream
TP	0.136	0.110	0.086	0.100
OP	0.088	0.067	0.068	0.066
TDP	0.097	0.061	0.099	0.084
TN	5.45	5.09	3.13	3.07
NO_3	1.043	0.886	0.531	0.540
NO_2	0.132	0.117	0.303	0.282
NH_4	0.97	0.77	0.78	0.69
TKN	4.28	4.09	3.08	3.04
Na	261.8	223.8	181.9	136.9
K	6.6	6.3	8.2	8.1
Ca	109.6	104.2	86.5	85.6
Mg	39.7	35.9	35.3	35.9
Cl	366.8	333.1	247.6	236.6
SO_4	116.1	109.1	73.5	71.5
Alkalinity(meq/l)	8.2	7.4	6.7	6.5
Hardness (as $CaCO_3$)	468.4	428.7	354.9	362.3
Turbidity (JTU)	4.3	4.8	5.0	4.5
Color (PCU)	204.5	163.8	135.6	127.6
Copper (μg/l)	1.3	1.2	1.8	1.5

*All units are mg/l unless otherwise noted

The exception to this general trend, again, occurred at vegetable site #1, where the average downstream nitrite concentrations were approximately 0.02 mg/l higher than those at the upstream station. Results of the discharge quality monitoring (Shannon 1977) do not indicate the presence of excessively high nitrite concentrations at vegetable site #1 which would cause this discrepancy in the results. Again the probable cause of this discrepancy is the lack of sensitivity of the receiving water sampling design.

Downstream trends in major constituent concentrations at both vegetable farms #1 and #2 indicate that the discharges from these farms introduce mineralized waters into the receiving canals. Sodium, potassium, magnesium and chloride concentrations were found to increase below both vegetable site #1 and #2 discharges. Calcium concentrations did not follow the same trend at both sites #1 and #2; downstream of site #2 calcium increased in concentration whereas site #1 it decreased. Vegetable site #3, located only a few miles east of site #1 on the Ocean Canal, had decreased concentrations of all major constituents downstream of the discharge.

The difference between vegetable sites #1 and #3 is particularly interesting because of the proximity of the two sites. Clearly the impacts on canal water quality of sites #1 and #3 are considerably different. Discharges from vegetable farm #1 cause a considerable increase in the concentration of most of the major constituents as well as the phosphorus concentrations in the Ocean Canal. Site #3, however, appears to have considerably less impact as only turbidity increased below the discharge. The average concentrations of sodium, chloride, and sulfate in the discharges from the three vegetable sites decrease in concentration as follows: site #1, site #3, and site #2 (Shannon 1977) obviously a different order than that suggested by the receiving water data since the site #3 discharge was the only one which did not cause increases in these constituents downstream.

Seasonal Water Quality

The examination of the data on the site by site basis discussed above does not show any patterns of water quality impact that can be directly associated with the three agricultural types studied. The failure of this site by site evaluation to clarify the water quality impacts resulting from the discharges of the individual farms is in part due to the lack of control over all the variables which influence changes in the constituent concentrations as the canal flows by the discharge.

The evaluation of the water quality data on a seasonal basis gives a clearer picture of the effects of agricultural drainage on the receiving canal water quality. The results (Table III-8) show the improvement in water quality which occurs with the reduction of backpumping from the agricultural sites in the dry season.

The five study canals (Hillsboro, L-6, Miami, Ocean and West Palm Beach) had a considerably poorer water quality during the wet season as evidenced by the higher concentrations of nutrients in the wet season. Most nutrient forms, including total phosphorus and total nitrogen, had higher concentrations in the wet season. Average total phosphorus concentrations in the wet season ranged from 0.007 mg/l to 0.139 mg/l higher than the dry season averages in the West Palm Beach and Miami canals, respectively. Average total nitrogen concentrations on the other hand varied from 1.10 mg/l to 2.64 mg/l higher in the wet season than in the dry season. Nitrate, in fact, was the only nutrient parameter which did not have a higher average in the wet season on all five canals.

Major cation (sodium, potassium, calcium and magnesium) and anion (chlorides and sulfate) concentrations in the five study canals also indicate the degrading influence of the agricultural discharges. Sodium chloride, calcium and magnesium concentrations were consistently higher in the five canals during the wet season.

TABLE III-8. SEASONAL WATER QUALITY DATA[1] FOR THE SIX CANALS SAMPLED DURING THIS STUDY

Parameter	Hillsboro		L-6		Miami		Ocean		West Palm Beach		L-8	
	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry
Total PO_4	0.158	0.064	0.125	0.035	0.189	0.050	0.119	0.109	0.122	0.115	0.057	0.060
Ortho PO_4	0.109	0.026	0.044	0.015	0.163	0.030	0.092	0.067	0.072	0.061	0.016	0.044
Total Dissolved PO_4	0.135	0.050	0.055	0.029	0.179	0.047	0.108	0.088	0.090	0.087	0.030	0.044
Total N	4.91	3.51	3.94	2.84	5.30	3.68	5.65	3.01	5.29	3.92	1.48	2.17
NO_3	0.510	0.775	0.488	0.502	2.08	1.407	1.173	0.672	0.750	0.994	0.108	0.394
NO_2	0.086	0.041	0.671	0.038	0.059	0.028	0.313	0.047	0.116	0.074	0.010	0.021
NH_4	0.66	0.18	0.95	0.28	0.13	0.08	0.92	0.36	1.02	0.42	0.06	0.05
TKN	4.31	2.70	3.94	2.30	3.17	2.24	4.50	2.30	4.43	2.85	1.36	1.70
Na	181.1	110.8	158.1	119.2	76.3	67.9	252.7	142.1	156.3	110.1	33.9	70.7
K	8.00	8.9	6.36	6.7	4.5	6.2	8.3	9.8	6.5	8.4	1.5	4.9
Ca	119.1	85.7	116.6	84.9	127.9	80.6	111.6	76.9	119.6	80.0	45.8	54.7
Mg	45.8	33.6	39.8	29.9	29.6	22.7	47.0	28.1	37.4	27.8	8.8	16.7
Cl	244.9	149.3	228.1	187.0	120.0	108.0	344.0	213.4	210.1	169.0	57.4	107.7
SO_4	48.8	77.2	41.0	46.1	110.0	137.0	104.7	130.7	130.9	144.8	31.5	228.7
Alkalinity (meq/l)	9.02	6.51	9.1	6.3	6.5	4.5	8.4	5.6	7.1	5.2	2.3	3.3
Hardness (mg $CaCO_3$/l)	493.4	386.4	464.4	354.0	460.6	298.7	490.1	318.7	466.6	331.0	150.0	190.0
Turbidity (JTU)	4.6	3.0	2.1	1.3	2.9	2.9	3.6	3.4	4.1	8.4	6.2	4.2
Color (PCU)	221.6	124.3	187.6	94.2	164.7	76.8	224.4	98.9	232.4	99.1	134.3	73.3
Copper (μg/l)	1.2	1.1	0.8	1.4	1.4	2.6	1.1	2.7	0.9	3.2	0.4	5.4
Temperature (°C)	27.7	19.2	26.6	20.6	28.0	21.0	27.8	21.3	27.9	21.7	29.0	22.0
D.O.	2.2	5.7	0.9	4.9	3.5	6.6	2.0	5.0	1.6	5.5	5.4	5.0
Conductivity (μmhos/cm)	1652	1102	1420	1093	1106	816	2068	1269	1486	1152	675	981
pH (units)	7.1	7.6	7.0	7.5	7.2	7.9	7.2	7.5	7.1	7.5	7.6	7.6

[1]All results are presented in mg/l unless otherwise noted

Potassium and sulfates, on the other hand, were lower in the wet season.

Dissolved oxygen concentrations also showed large differences between the two seasons. The seasonal averages for the five canals varied from 3.0 mg/l to 4.0 mg/l higher in the dry season. These low wet season dissolved oxygen concentrations are not the result of a large biological oxygen demand (BOD) since BOD_5 results reported by Shannon (1977) and unpublished results of the SFWMD indicate that BOD_5's are not unusually high in these canals. The primary factor contributing to the low dissolved oxygen concentrations during the wet season is probably the backpumping of large amounts of groundwater from the agricultural sites.

The influence of groundwater, which also manifests itself with the increased cation and anion concentrations during the wet season, results from the drainage practices used in the agricultural area. Drainage from these farms is accomplished via a network of canals and ditches which intercept and collect water as it infiltrates through the soil into the groundwater. Using pumps to provide positive control of the water levels in the canals and ditches allows artifically low groundwater levels to be maintained in the farms and results in large amounts of groundwater with little dissolved oxygen and high dissolved solids being discharged into the receiving canals.

Water Quality in L-8

The data collected in the L-8 canal (Table III-8) indicates that this canal had much better water quality in comparison to the five study canals. The distinct seasonal variation in the water quality found in the study canals was not as evident in the L-8 canal. The small seasonal differences that do exist show slightly higher concentrations for most of the parameters in the dry season a trend opposite that seen in the study canals.

Total nitrogen and phosphorus concentrations in L-8 were nearly always lower, in both wet and dry seasons, than they were in the study canals. The dry season total phosphorus concentrations in both the Miami and L-6 canals were, however, slightly lower than those in the L-8 canal, indicating that the background phosphorus concentrations in these canals are comparable to those in the control canal. The concentrations of the various nitrogen forms in L-8 and the study canals differed to a greater extent than did phosphorus, in both wet and dry seasons. The dry season total nitrogen concentrations in the study canals compared more closely to those in L-8, being 30 to 80% higher in the study canals. These differences compare to those in the wet season which were 166 to 280% higher in the study canals.

The major cation and anion concentrations in the L-8 canal followed the same trend that nitrogen and phoshporus did, i.e. lower concentrations during the wet season. Again the comparison of L-8 with the other canals is much closer during the dry season when the major constituent concentrations in L-8 are the highest and at their lowest in the study canals.

The comparison of the study canals with the control (L-8) does indicate large differences in water quality. Some of the differences seen in the water quality in these canals are probably the result of the somewhat different soil types present in the L-8 basin. This basin, unlike the study canal basins, does not consist entirely of muck soils; but has some areas with sandy soil types. The presence of sandy soils within the L-8 basin, however, cannot alone account for the large differences that exist in the water quality.

The reversed seasonal trends in water quality in the control and study canals is an indication of the difference in land use and drainage practices within the basins rather than the soil types present. The absence of intensively drained agricultural land in the L-8 basin allows an improvement in the wet season water quality as the heavier rainfall during this season causes a rapid flushing of the canal with relatively high quality water. The study canals, on the other hand, receive large amounts of groundwater influenced drainage, especially in the wet season causing the degradation of the water quality in these canals. Viewed from this perspective, the net impact of the agricultural drainage in the study canals becomes much more evident than when it is viewed on a site by site basis.

Application of Chapter 17-3 Rules

Six of the parameters sampled during this program are required to meet numerical standards set forth in the Florida Administrative Code Chapter 17-3. The six parameters to which these standards apply are: chloride, turbidity, dissolved oxygen, conductivity, pH and copper. The following discussion compares the data collected during this study to the applicable standards (Table III-10) set forth in Chapter 17-3.

The Miami and L-8 canals were the only two canals in this study which did not exceed the 250 mg/l chloride standard (Table III-9) sometime during the study. The Ocean Canal, in fact, had an average concentration during the wet season nearly 100 mg/l higher than the standard. Dry season concentrations of chloride were much lower than in the wet season; however, many violations still occurred. It is obvious that certain locations within the Everglades Agricultural Area have greater problems with high chlorides than other areas; this problem is most probably the result of contact between the groundwater and connate sea water in these areas (Waller and Earle 1975). The effect of this connate sea water is accentuated, however, by the forced drainage practices in the agricultural area as previously explained.

The turbidity standard (Table III-10) was not violated at any time in these canals during the study period. It was not expected at the outset of this study

TABLE III-9. WATER QUALITY DATA FROM THE AG AREA CANALS PERTAINING TO FLORIDA WATER QUALITY STANDARDS CHAPTER 17-3.

	Wet Season			Dry Season		
	Average	Maximum	Minimum	Average	Maximum	Minimum
Hillsboro Canal						
Cl	244.9	267.8	223.7	149.3	266.6	82.4
Turbidity (JTU)	4.6	1.2	19.0	3.0	1.9	4.0
Dissolved Oxygen (mg/l)	2.2	3.6	1.3	5.7	6.4	4.9
Conductivity (μmhos/cm)	1652	1800	1200	1102	1412	720
pH (units)	7.1	7.6	6.6	7.6	7.7	7.6
Copper (μg/l)	1.2	2.8	<0.5	1.1	2.5	<0.6
L-6 Canal						
Cl	228.1	251.7	180.9	187.0	279.9	124.0
Turbidity (JTU)	2.1	3.3	1.2	1.3	2.0	<0.7
Dissolved Oxygen (mg/l)	0.9	1.8	0.1	4.9	6.4	2.8
Conductivity (μmhos/cm)	1420	1700	1130	1093	1460	813
pH (units)	7.0	7.1	6.8	7.5	7.7	7.3
Copper (μg/l)	0.8	1.8	<0.4	1.4	4.8	<0.6
Miami Canal						
Cl	120.0	167.4	28.3	108.0	124.6	85.7
Turbidity (JTU)	2.9	5.5	1.1	2.9	6.9	1.1
Dissolved Oxygen (mg/l)	3.5	5.7	2.3	6.6	8.4	2.8
Conductivity (μmhos/cm)	110.6	1233	583	816	1015	660
pH (units)	7.2	8.2	6.3	7.2	7.6	6.6
Copper (μg/l)	1.4	4.3	<0.6	2.6	5.4	<0.6
Ocean Canal						
Cl	344.0	478.2	63.8	213.4	566.5	106.6
Turbidity (JTU)	3.6	10.1	1.1	3.4	11.0	1.0
Dissolved Oxygen (mg/l)	2.0	4.7	0.8	5.0	8.1	0.1
Conductivity (μmhos/cm)	2067	2583	1462	1269	2400	700
pH (units)	7.1	7.6	6.6	7.5	8.0	6.4
Copper (μg/l)	1.1	6.40	0.4	2.7	6.6	0.6
West Palm Beach Canal						
Cl	210.1	287.8	41.8	168.6	289.6	99.6
Turbidity (JTU)	4.1	10.4	1.2	8.4	26.0	1.7
Dissolved Oxygen (mg/l)	1.6	2.9	0.6	5.5	7.9	1.9
Conductivity (μmhos/cm)	1486	1900	1050	1152	1833	630
pH (units)	7.1	7.7	6.7	7.5	8.0	6.4
Copper (μg/l)	0.9	4.4	<0.4	3.2	6.9	<0.6
L-8 Canal						
Cl	57.4	84.3	21.2	107.7	132.6	80.1
Turbidity (JTU)	6.2	9.2	3.3	4.2	8.5	1.1
Dissolved Oxygen (mg/l)	5.4	5.8	5.1	5.0	7.0	4.2
Conductivizy (μmhos/cm)	675	680	675	981	1310	700
pH (units)	7.6	7.6	7.6	7.6	7.8	7.4
Copper (μg/l)	0.4	0.4	0.4	5.4	8.8	2.0

TABLE III-10. SELECTED CLASS I AND CLASS III WATER QUALITY PARAMETERS COVERED IN FLORIDA ADMINISTRATIVE CODE CHAPTER 17-3 POLLUTION OF WATERS.

Parameter	Criteria
Specific Conductance	Shall not be increased more than one hundred per cent (100%) above background levels or to a maximum level of 500 micromhos per centimeter (cm) for streams considered to be fresh water streams.
Iron	Shall not exceed 0.30 mg/l
pH	Of receiving waters shall not be caused to vary more than one (1.0) unit above or below normal pH of the waters; and lower value shall be not less than six (6.0), and upper value not more than eight and one-half (8.5). In cases where pH may be, due to natural background or causes, outside limits stated above, approval of the regulatory agency shall be secured prior to introducing such material in waters of the state.
Chlorides	Shall not exceed two hundred fifty (250) mg/l in streams considered to be fresh water streams.
Dissolved Oxygen	The concentration in all surface waters shall not average less than 5 mg/l in a 24-hour period and never less than 4 mg/l. Normal daily and seasonal fluctuations above these levels shall be maintained.
Turbidity	Shall not exceed fifty (50) Jackson units as related to standard candle turbidimeter above background.
Copper	Shall not exceed 0.5 mg/l.

that any turbidity violations would be encountered. The flatness of the agricultural lands and their well drained nature prevent overland runoff which normally results in turbidity problems due to soil erosion.

Dissolved oxygen concentrations failed to meet the levels set by the State Standards (Table III-10) in all canals except L-8. Average wet season dissolved oxygen concentrations in the five study canals ranged from a low of 0.9 mg/l in L-6 to a high of 3.5 mg/l in the Miami Canal with individual samples ranging from 0.1 mg/l to 5.7 mg/l during this period. During the dry season the average dissolved oxygen concentrations increased considerably (Table III-9), with average concentrations for surface to bottom profiles ranging from 4.9 mg/l to 6.6 mg/l, and individual measurements from 0.1 mg/l to 8.7 mg/l. Even though there were standard violations in the dry season their decreased incidence and the relatively high dissolved oxygen concentrations indicate that the dissolved oxygen standard can be met in these waters.

The standard for specific conductance (Table III-10) was exceeded in every sample collected. Since the average specific conductance values for Lake Okeechobee are above 500 μmhos/cm, it is expected that the levels in the canals, which receive discharges from the Lake would also violate the standard. These results indicate that the 500 μmhos/cm standard is unattainable in this area of the state.

The standard for pH (Table III-10) is difficult to interpret since it requires definition of the "...normal pH of the water ..." which, due to the natural variability in pH, is very difficult. If one assumes that the "normal" pH for these canals is defined by the average pH in the L-8 Canal (7.57) then a pH measurement above 8.57 or below 6.57 would be considered a violation of the pH standard. Using the above limits as a criteria, violations of the pH standard occurred in the Miami Canal in the wet season and West Palm Beach Canal in the dry season

(Table III-9). However, no pH's were measured which exceeded the maximum and minimum limits specified in the standards (Table III-10).

Copper was the only trace metal measured for compliance with state standards during this study. It was originally suspected that violations of the 0.5 mg/l standard may occur in the agricultural areas since copper is sometimes applied as a micronutrient and as a component in some fungicides and herbicides. As the data indicates (Table III-9) none of the copper concentrations measured during the study even approached a violation of the standards.

PART IV

MAGNITUDE AND AREAL EXTENT OF THE EFFECTS OF BACKPUMPING ON LAKE OKEECHOBEE

Drainage water from the Everglades Agricultural Area is pumped by private land owners into four primary canals: North New River Canal, Hillsboro Canal, Miami Canal, and Canal 20. Sections of the North New River and Hillsboro Canals are subsequently backpumped into the Rim Canal of Lake Okeechobee by pump stations S-2, the Miami Canal by S-3, and Canal 20 by S-4. The Rim Canal, which was dug as a borrow canal to provide fill for the Lake's southern levee, opens to the north into the limnetic zone near the City of Pahokee and to the west into Fisheating Bay. Between these two points there are intermittant breaks in the Rim Canal which allows water to flow into the South Bay area. In order to evaluate the areal extent of backpumping on Lake Okeechobee, the following three primary objectives were established:

1. To characterize the quality of water backpumped by Pump Stations S-2, S-3, and S-4.
2. To quantify the mass loadings of nitrogen and phosphorus backpumped by S-2, S-3, and S-4.
3. To determine the magnitude and areal extent of the effects of backpumping from S-2, S-3, and S-4 on the water quality in the southern latitudes of Lake Okeechobee.

MATERIALS AND METHODS

Sampling Site Locations

The twenty-seven sample site locations established for this part of the study are displayed in Figure IV-1. To estimate the areal extent of the effects of backpumping on Lake Okeechobee, sampling stations were selected in the Rim Canal, the littoral zone, and the limnetic zone of the Lake. Many of these stations are located along East-West and North-South transects which facilitated the relocation of the stations during subsequent sampling periods.

Additional data which were utilized in the preparation of this report were drawn from ongoing monitoring programs that were implemented prior to the existence of this specific study. The material loading and budget study of Lake Okeechobee was the source for data which describes the water quality at Pump Stations S-2, S-3, and S-4. Additional data was drawn from the water quality monitoring program of the Lake's limnetic zone. Both of these ongoing studies are partially documented in the interim report on the "Chemical and Biological Investigations of Lake Okeechobee (F.C.D. Technical Publication #75-1)". The locations of the sampling stations utilized in F.C.D. Technical Report #75-1 are shown in Figure IV-2.

Hydrological Data

The hydrological data used in this report were extracted from unpublished monthly summary sheets (Lake Okeechobee Water Budget Report) which were prepared by the Jacksonville, Florida office of the U.S. Army Corps of Engineers. These summary sheets list daily lake stage, rainfall rates, evaporation rates, discharge rates into the Lake, and release rates from the Lake. Rainfall data, which were obtained from the Corps summary sheets were reduced by 20 percent (Riebsame, *et al.* 1974) and applied to the area inside the dike (500,000 acres) which surrounds Lake Okeechobee.

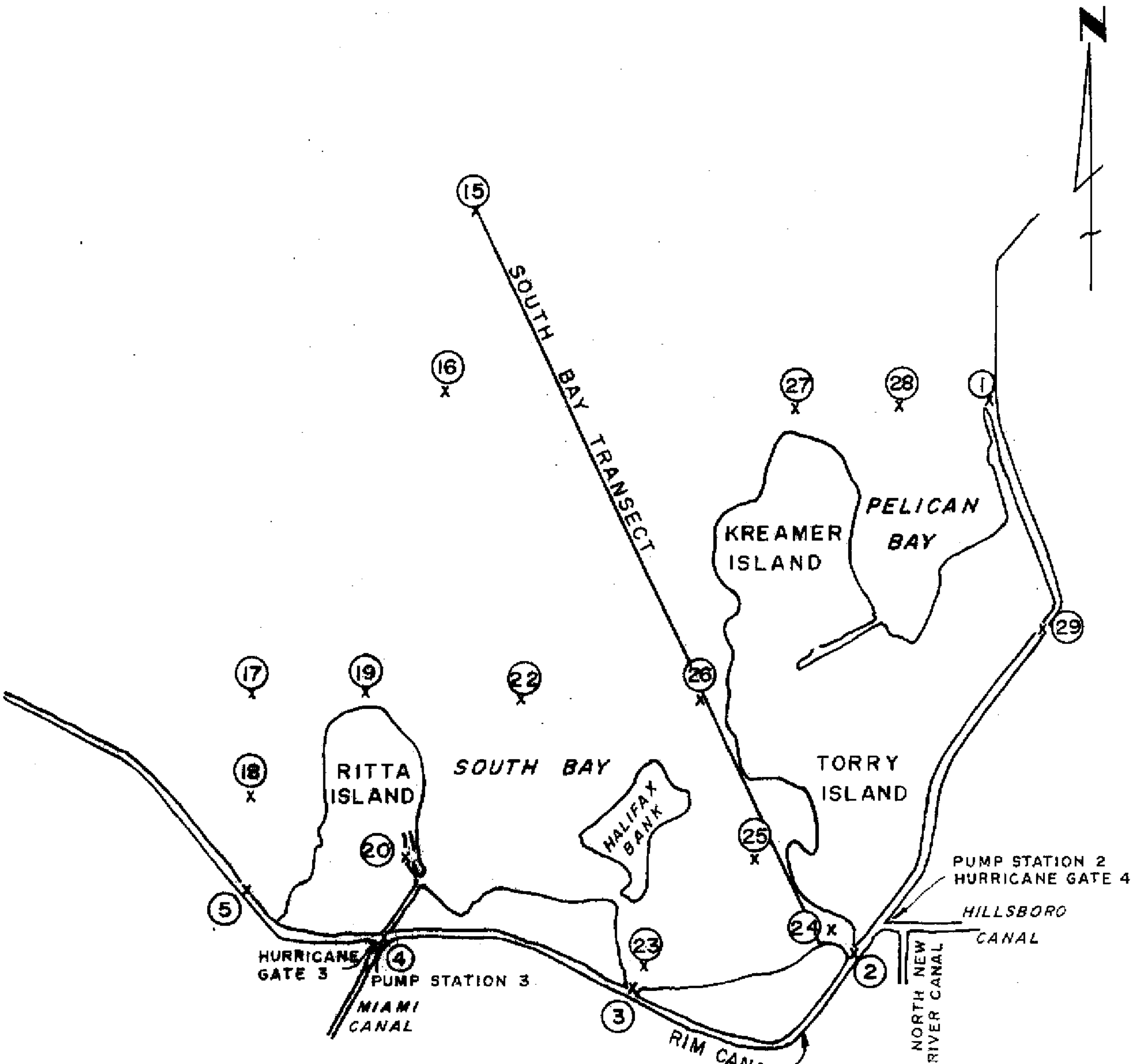


Figure IV-1 LOCATION OF SAMPLING SITES FOR BACKPUMPING STUDY

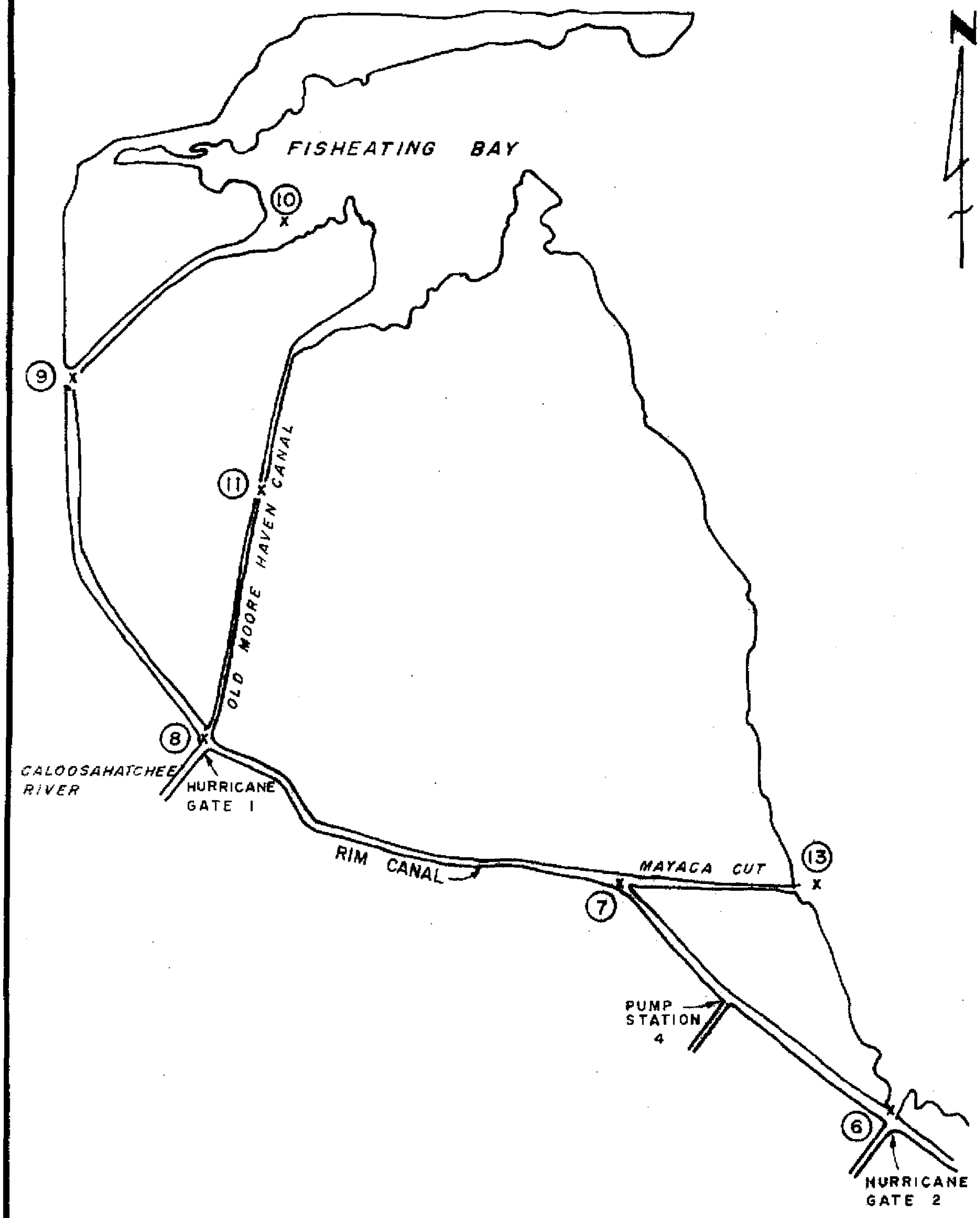


Figure IV-1 (continued) LOCATION OF SAMPLING SITES FOR BACKPUMPING STUDY

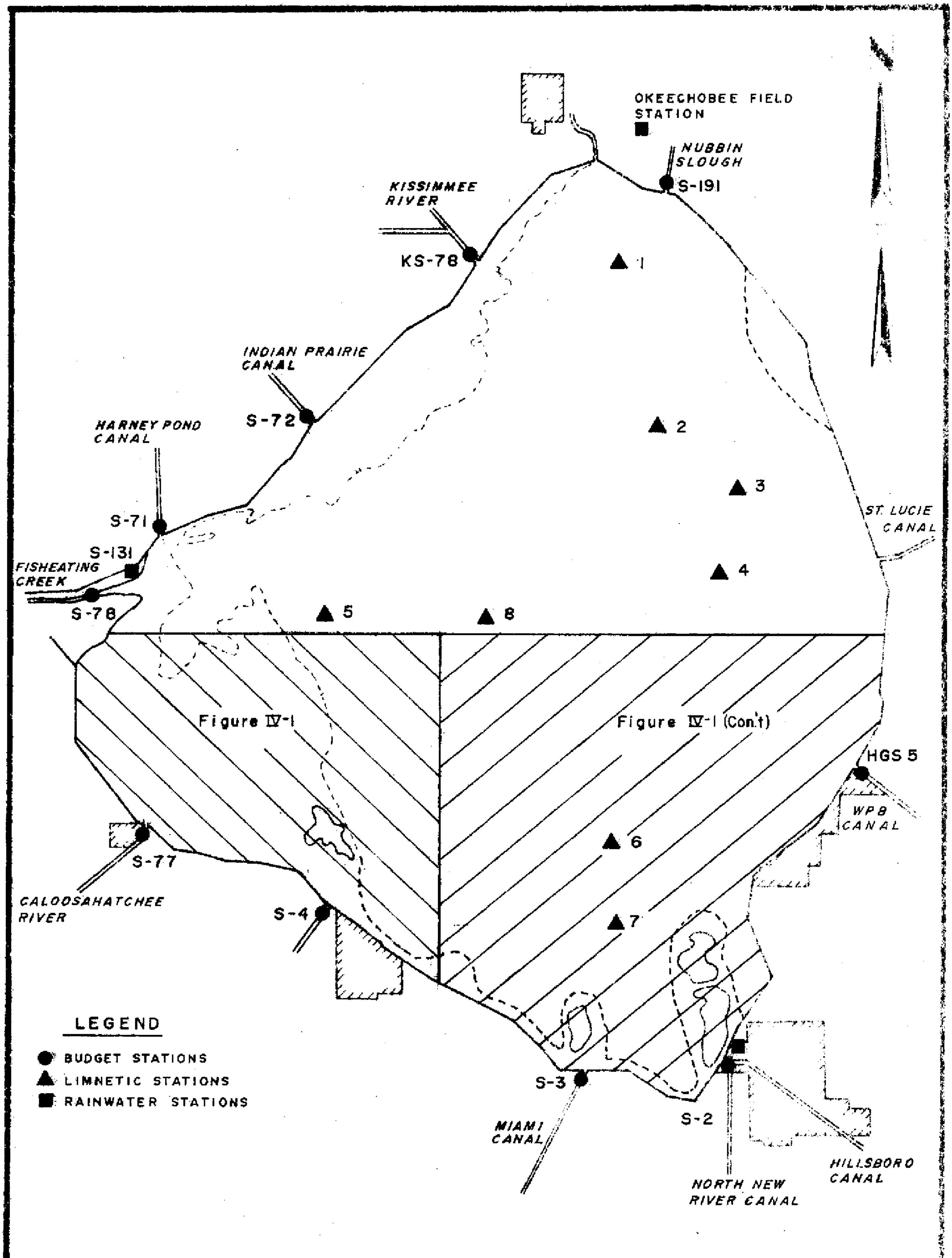


Figure IV-2 LAKE OKEECHOBEE SAMPLE STATIONS

Sampling Frequency

Fifteen sampling trips were conducted during this study. Table IV-1 shows a list of these sample dates along with the dates on which backpumping took place at the three major pump stations (i.e., S-2, S-3 and S-4). Ten of the sampling trips coincided with periods of backpumping from Pump Station S-2, S-3 or S-4.

TABLE IV-1. SAMPLING DATES FOR PUMP STATIONS S-2, S-3, and S-4.

Sample Dates	Pump Stations	Dates Backpumping Occurred[1]					
April 27, 1976	S-2						
	S-3						
	S-4						
May 11, 1976	S-2						
	S-3		5/9				
	S-4						
May 24, 1976	S-2	5/21	5/22	5/23	5/24	5/25	5/26
	S-3			5/23	5/24	5/25	5/26
	S-4						
June 15, 1976	S-2	6/12	6/13	6/14			
	S-3		6/13	6/14			
	S-4			6/14			
July 13, 1976	S-2	7/10	7/11				
	S-3						
	S-4		7/11	7/12	7/13	7/14	
August 17, 1976	S-2			8/16	8/17	8/18	8/19
	S-3					8/18	8/19
	S-4		8/15	8/16	8/17	8/18	8/19
September 14, 1976	S-2		9/12	9/13	9/14	9/15	9/16
	S-3		9/12	9/13	9/14	9/15	9/16
	S-4						
September 28, 1976	S-2	9/25		9/27			
	S-3	9/25					9/30
	S-4						
October 13, 1976	S-2						
	S-3						
	S-4						
January 4, 1977	S-2			1/3	1/4		
	S-3			1/3	1/4		
	S-4				1/4		
March 8, 1977	S-2						
	S-3						
	S-4						
June 16, 1977	S-2						
	S-3						
	S-4						
July 13, 1977	S-2	7/10					
	S-3						
	S-4						
August 16, 1977	S-2				8/9		
	S-3			8/8	8/9		
	S-4						

[1]Dates considered are 3 days prior to and 2 days after sample date.

RESULTS AND DISCUSSION

Characterization of Pump Station S-2, S-3, and S-4 Discharge

The North New River and Hillsboro Canals, the Miami Canal, and Canal 20 discharge into the Rim Canal of Lake Okeechobee via Pump Stations S-2, S-3, and S-4. During the study period Pump Station S-2 backpumped 269,000 acre-feet which was four times the volume backpumped by Pump Station S-3 (65,800 acre-feet) and almost 9 times the volume discharged by Pump Station S-4 (30,400 acre-feet). The frequency of backpumping through these three pump stations was not evenly distributed throughout the year but followed a distinct seasonal pattern (Table IV-2). The majority of the backpumping occurred from May through September. This would be expected since the function of backpumping is to remove excess rainfall from the basin. Comparison of pump station discharges during this study period to the period of record (Table IV-2) indicates that this study was conducted during a time frame when the quantity of water backpumped was less than average.

The quality of water backpumped through S-2 and S-3 had distinct characteristics, some of which differed from the quality characteristics of water backpumped through S-4. Discharge into the Rim Canal of Lake Okeechobee through S-2 and S-3 was characterized as having very high nitrogen levels, high dissolved solid levels (as represented by specific conductivity), moderately low phosphorus levels, depressed dissolved oxygen concentrations and low turbidity levels. In contrast Pump Station 4 discharge had only moderate nitrogen levels but contained high phosphorus levels. The other major quality characteristics of the S-4 discharge were similar to S-2 and S-3 with high dissolved solids, depressed dissolved oxygen concentrations and low turbidity levels. Specifically, the flow weighted total nitrogen concentrations at S-2 and S-3 were 4.82 and 4.60 mg/l, respectively (Table IV-3), with peak

TABLE IV-2. MEAN MONTHLY FLOWS (CFS) INTO LAKE OKEECHOBEE FROM BACKPUMPING AT S-2, S-3 AND S-4

Month	North New River and Hillsboro Canals (S-2)		Miami Canal (S-3)		Canal-20 (S-4)	
	Period of Record[1]	Study Period[3]	Period of Record[1]	Study Period[3]	Period of Record[2]	Study Period[3]
January	3726	12596	617	3291	957	2337
February	2925	594	424	0	545	861
March	7325	0	4054	0	1110	1841
April	2013	622	1130	0	199	196
May	10164	18567	3177	4981	1159	1738
June	15870	12007	5416	1455	588	882
July	17126	4434	4669	211	2227	1029
August	12790	15588	2803	4479	2169	1409
September	18189	22128	7042	6552	3822	0
October	7634	0	3215	301	686	0
November	4492	1276	1958	355	1176	0
December	3858	4687	540	0	1406	0
Mean Flow (CFS)	8843	7708	2920	1802	1337	860

1) January 1969 through April 1978

2) July 1974 to April 1978

3) April 1976 through August 1977

NOTE: These flows are summarized from the South Florida Water Management District's unpublished pump station logs

TABLE IV-3. HYDROLOGICAL AND NUTRIENT CHARACTERISTICS OF THE NORTH NEW RIVER AND HILLSBORO CANALS, MIAMI CANAL AND CANAL 20 - APRIL 1976 THROUGH AUGUST 1977.

	North New River and Hillsboro Canals at Pump Station 2 (S-2)	Miami Canal at Pump Station 3 (S-3)	Canal 20 at Pump Station 4 (S-4)
Discharge			
Acre-ft.	269000	65800	30400
Total N			
Minimum (mg N/l)	1.51	1.61	1.36
Maximum (mg N/l)	7.65	8.81	3.86
Mean (mg N/l)	3.68	3.02	2.34
Flow weighted	4.82	4.60	2.56
Backpumped load (Tons)	1765	411	106
Inorganic N			
Minimum (mg N/l)	0.05	0.02	0.01
Maximum (mg N/l)	5.90	5.17	1.45
Mean (mg N/l)	1.22	0.87	0.37
Flow weighted	1.92	2.05	0.48
Backpumped load (Tons)	704	183	20
Organic N			
Minimum (mg N/l)	0.55	1.15	1.15
Maximum (mg N/l)	4.52	3.64	3.35
Mean (mg N/l)	2.43	2.11	1.97
Flow weighted	2.90	2.55	2.08
Backpumped load (Tons)	1061	228	86
Total P			
Minimum (mg N/l)	0.027	0.005	0.019
Maximum (mg N/l)	0.248	0.160	0.721
Mean (mg N/l)	0.078	0.048	0.155
Flow weighted	0.095	0.066	0.256
Backpumped load (Tons)	35	6	11
Ortho P			
Minimum (mg N/l)	0.002	0.002	0.002
Maximum (mg N/l)	0.097	0.092	0.647
Mean (mg N/l)	0.037	0.015	0.115
Flow weighted	0.055	0.032	0.205
Backpumped load (Tons)	20	3	9

total nitrogen concentrations reaching as high as 7.65 mg/l at S-2 and 8.81 mg/l at S-3. This contrasts to the much lower flow weighted and maximum total nitrogen concentrations of 2.56 and 3.86 mg/l, respectively, measured at S-4. A breakdown of total nitrogen into inorganic and organic components reveals that the differences between the high total nitrogen concentration at S-2 and S-3 and the lower levels at S-4 are attributable to differences in the inorganic nitrogen fraction. The flow weighted organic nitrogen concentrations were relatively constant between S-2, S-3 and S-4 at 2.90, 2.55, and 2.08 mg/l, respectively. There was, however, a large difference in the inorganic nitrogen fractions. The flow weighted inorganic nitrogen concentration at S-2 and S-3 was 1.92 and 2.05 mg/l, respectively, which accounted for between 40 and 45 percent of the total nitrogen discharged by these two structures. Pump Station 4, on the other hand, had a 75 percent lower flow weighted inorganic nitrogen concentration (0.48 mg/l) which accounted for only 20 percent of the total nitrogen level at S-4.

The other major difference in the characteristics of the S-4 discharge, as compared to S-2 and S-3, was in the phosphorus concentrations. The flow weighted total phosphorus concentration at S-4 was 0.256 mg/l (Table IV-3) which was 2½ times greater than the total phosphorus concentration of 0.095 mg/l at S-2 and 4 times the concentration of 0.066 mg/l measured at S-3. The maximum total phosphorus concentrations measured at the three pump stations paralleled the flow weighted trend with the maximum value at S-4 (0.721 mg/l) being 3 to 4½ times higher than the maximum value at S-2 (0.248 mg/l) and S-3 (0.160 mg/l). The inorganic fraction (as represented by ortho-phosphorus) again appeared to account for the differences between the total phosphorus concentrations at the three pump stations. The fraction of the total phosphorus not in the ortho-phosphorus form remained relatively constant between the three pump stations, ranging from 0.03 to 0.05 mg/l. However, the flow weighted ortho-phosphorus concentration was 0.055 mg/l at S-2 and 0.032 mg/l at S-3 while at S-4 it was 4 to 7 times higher at 0.205 mg/l.

A distinct relationship was observed between the quantity of water backpumped and the quality of the resultant discharge into the Rim Canal. The highest total nitrogen concentrations measured at S-2 and S-3 occurred during periods of heavy backpumping. This correlation between peak discharge and peak nitrogen concentrations is illustrated graphically in Figures IV-3 and IV-4. Specifically, the highest total nitrogen concentrations measured at S-2 occurred in May (5.20 and 5.38 mg/l), July (4.85 mg/l), August (6.83 and 7.51 mg/l), September (5.19 mg/l) 1976 and in January (7.65 mg/l) and May (7.57 and 6.45 mg/l) 1977 when large quantities of water were being backpumped. When little or no backpumping was occurring total nitrogen concentrations were generally less than 3.0 mg/l. A similar quantity/quality relationship for total nitrogen was also observed at S-3 (Figure IV-4). Three distinct peaks in total nitrogen occurred at S-3 in May/June 1976 (6.29 and 4.15 mg/l) in August/September 1976 (8.81, 6.65, and 5.66 mg/l) and in May 1977 (6.69 mg/l). Again these highest total nitrogen concentrations corresponded to the 3 most intensive backpumping periods at S-3. At both S-2 and S-3 the high total nitrogen concentrations measured during periods of intense backpumping were mainly the result of elevated levels of inorganic nitrogen which are characteristics of water discharged by S-2 and S-3. Concentrations of total nitrogen at S-4 did not exhibit the same discharge/concentration relationship as was observed at S-2 and S-3. Total nitrogen levels did not consistently increase during backpumping at S-4 as they did at S-3 and S-4 (Figure IV-5). This lack of elevated total nitrogen concentrations during S-4 backpumping is reflected in the lower total nitrogen levels associated with S-4 as compared to S-2 and S-3.

Total phosphorus concentrations at S-2 and S-3 exhibited a discharge/concentration relationship similar to but less pronounced than total nitrogen.

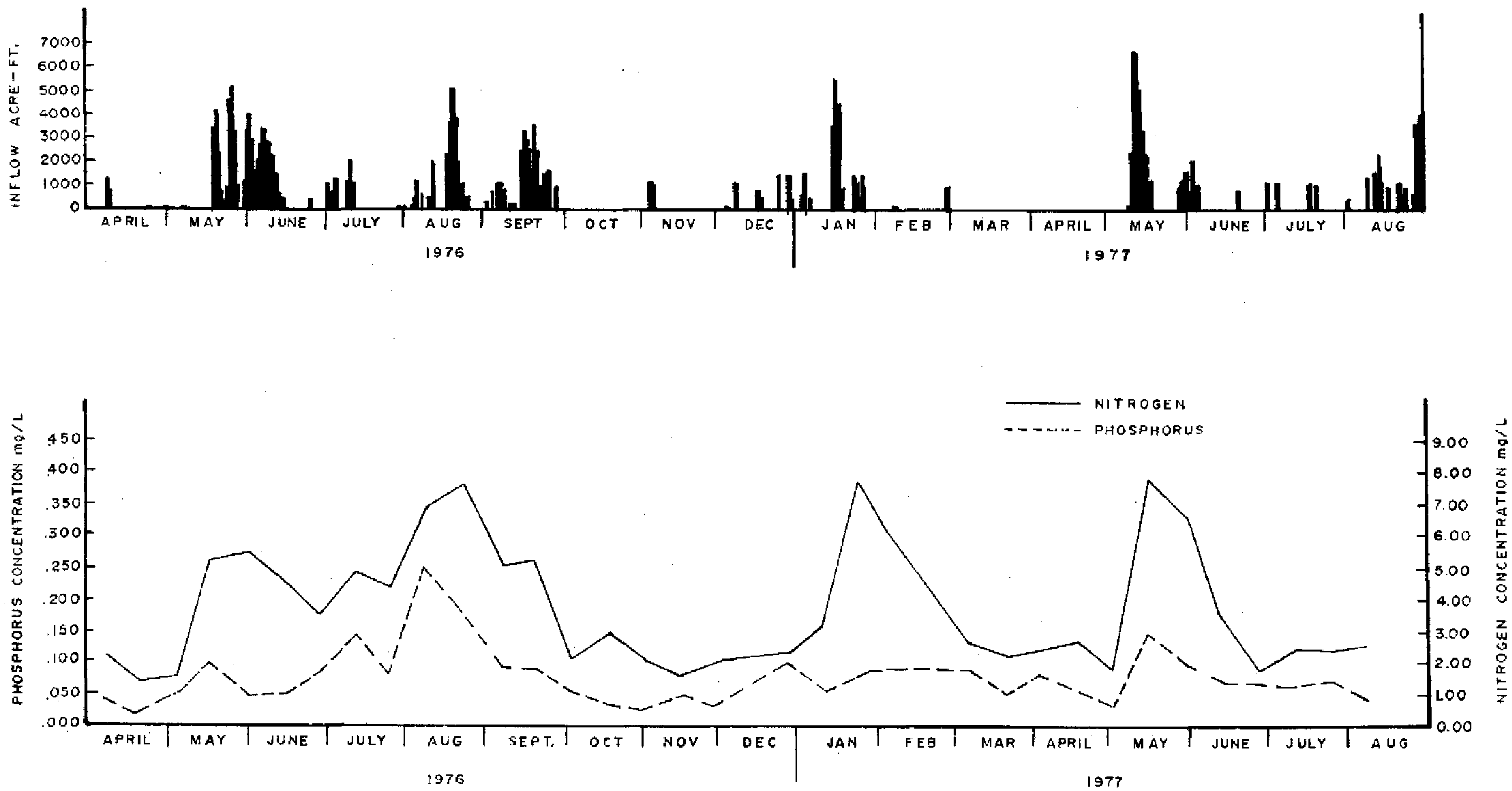


Figure IV-3 NITROGEN, PHOSPHORUS, AND INFLOW CHARACTERISTICS OF THE NORTH NEW RIVER AND HILLSBORO CANALS AT S-2

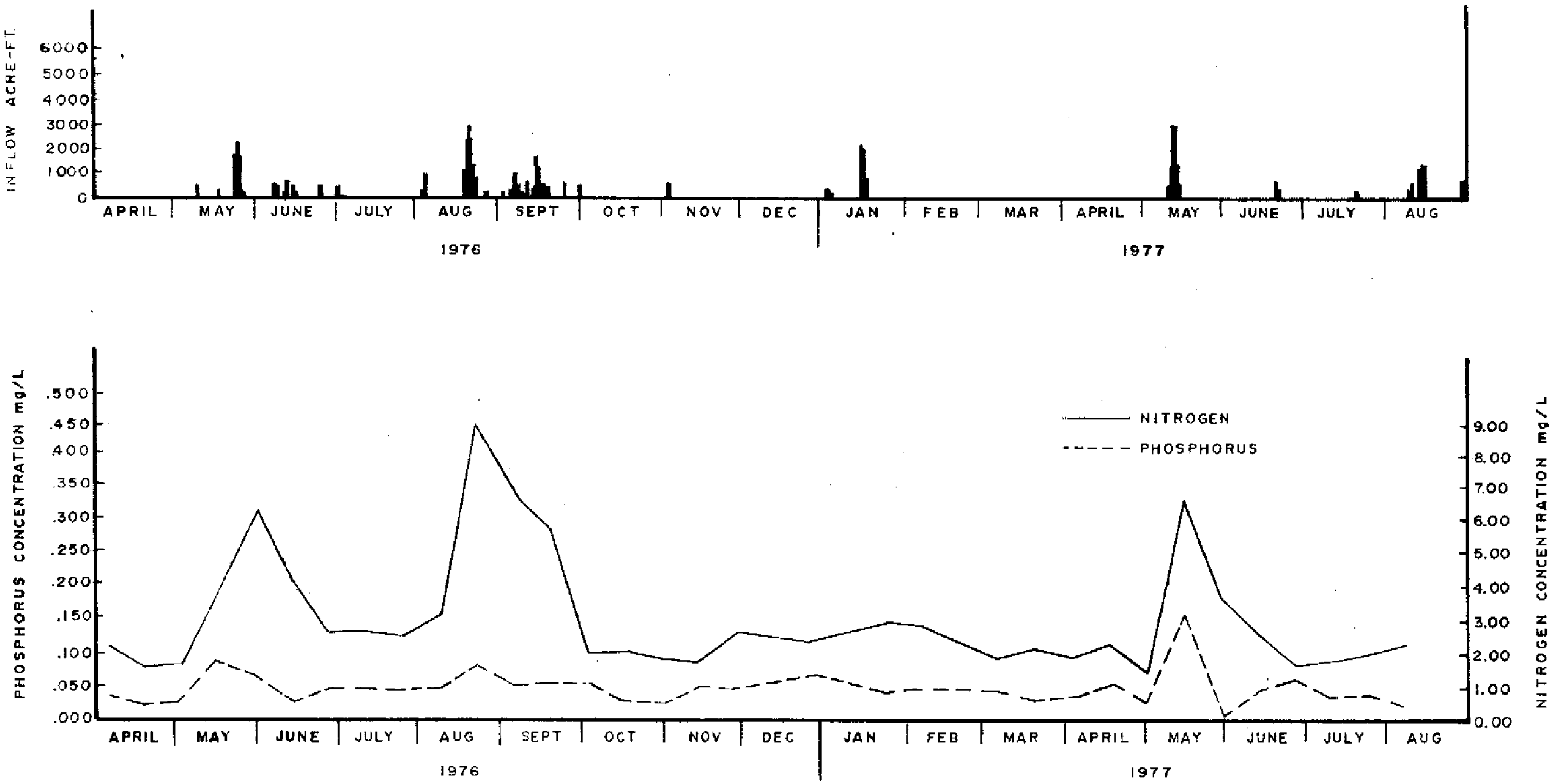


Figure IV-4 NITROGEN, PHOSPHORUS, AND INFLOW CHARACTERISTICS OF THE MIAMI CANAL AT S-3

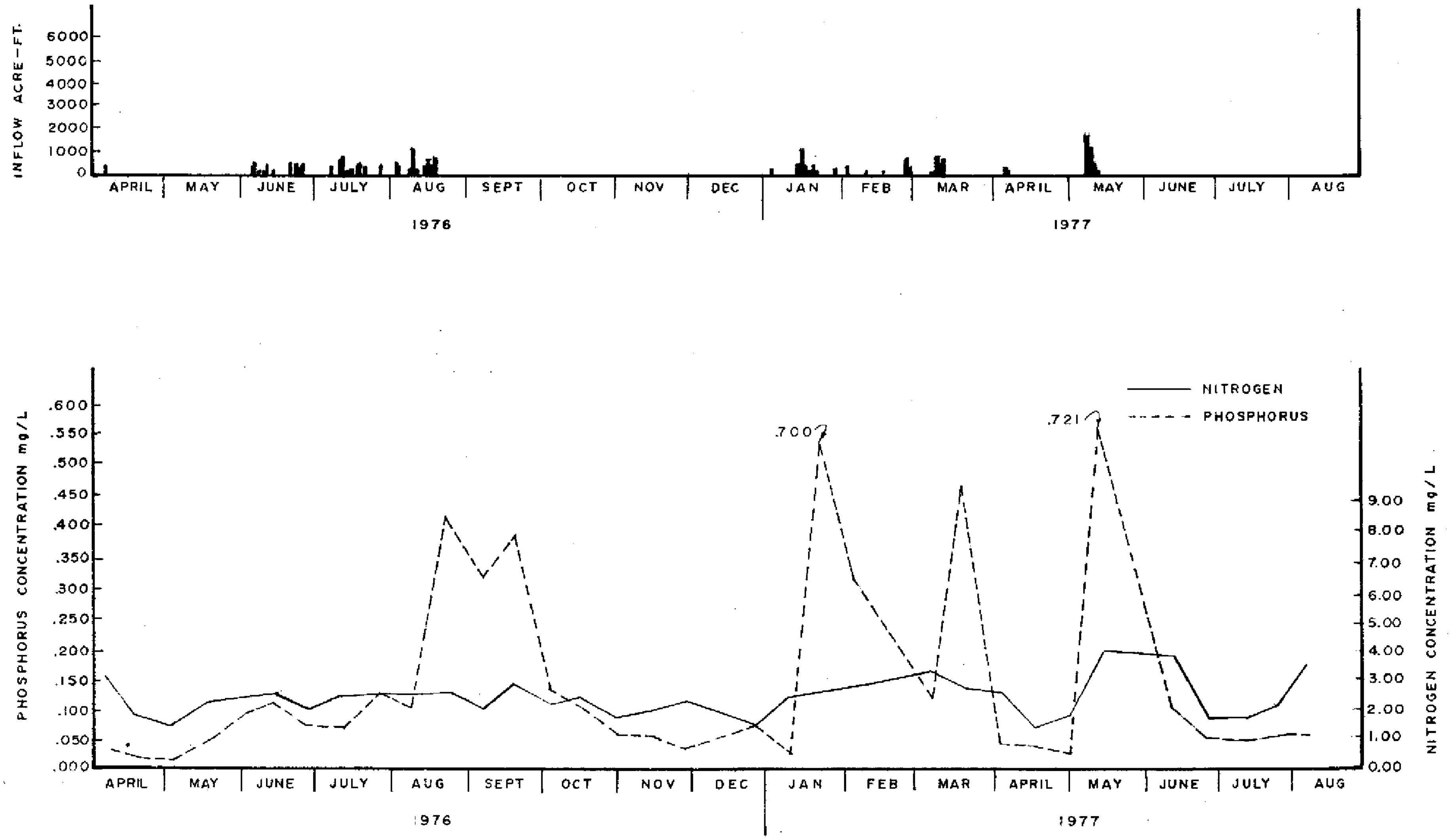


Figure IV-5 NITROGEN, PHOSPHORUS, AND INFLOW CHARACTERISTICS OF CANAL 20 AT S-4

Elevated total phosphorus levels were measured during periods of backpumping in a pattern similar to total nitrogen with the exception of January 1977 when total phosphorus levels remained low during a heavy period of backpumping.

Total phosphorus concentrations at S-4 displayed a more graphic correlation to backpumping events than did total phosphorus at S-2 and S-3 (Figure IV-5). In June and July 1976 moderate volume backpumping (<500 acre-feet/day) caused elevations in total phosphorus of 0.05 to 0.10 mg/l. However in August 1976 and January, March, and May 1977 backpumping in excess of 500 acre-feet/day caused elevations in total phosphorus concentration from 0.30 to 0.70 mg/l. These large increases in total phosphorus levels during major backpumping events are primarily responsible for characteristically high total phosphorus concentrations associated with S-4.

All three pump stations had high dissolved solids levels as represented by mean specific conductivities of 965, 807, and 782 μmhos/cm for S-2, S-3 and S-4, respectively. Fluctuations in specific conductivity followed patterns similar to total nitrogen and total phosphorus in that the conductivity usually increased during backpumping events (Figures IV-6, IV-7, IV-8). Dissolved oxygen concentrations were also similar between the pump station with ranges of 1.2 to 9.1 mg/l at S-2, 2.4 to 9.5 mg/l at S-3, and 1.5 to 9.8 mg/l at S-4. Lower dissolved oxygen concentrations were usually measured during periods of backpumping at all three pump stations (Figures IV-6, IV-7, and IV-8).

The majority of the turbidity values recorded at the pump stations were low, being less than 10 JTU's, and there was no evidence of increased turbidity during backpumping events.

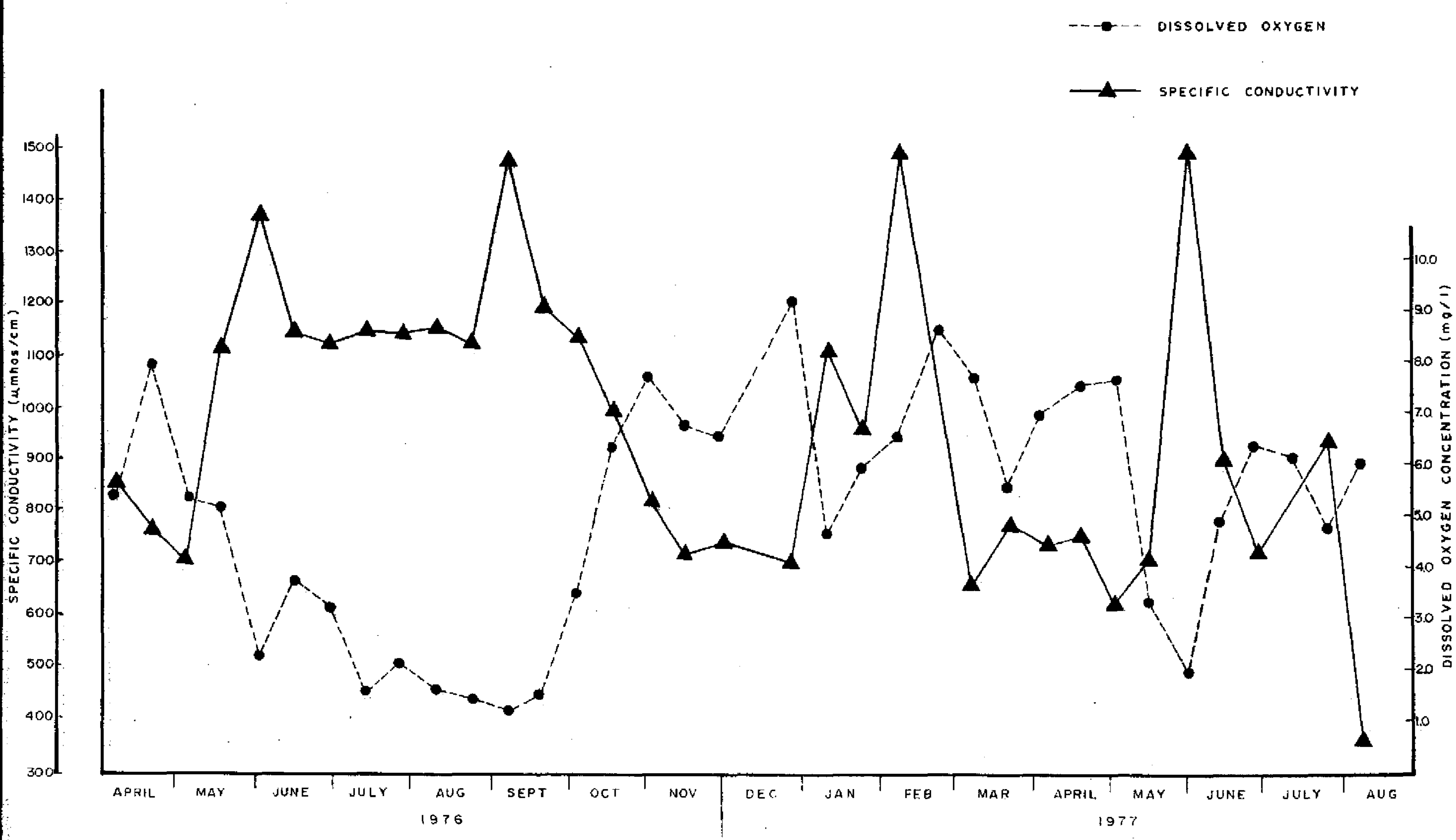


Figure IV-6 DISSOLVED OXYGEN AND SPECIFIC CONDUCTIVITY TRENDS IN THE NORTH NEW RIVER AND HILLSBORO CANALS AT PUMP STATION 2

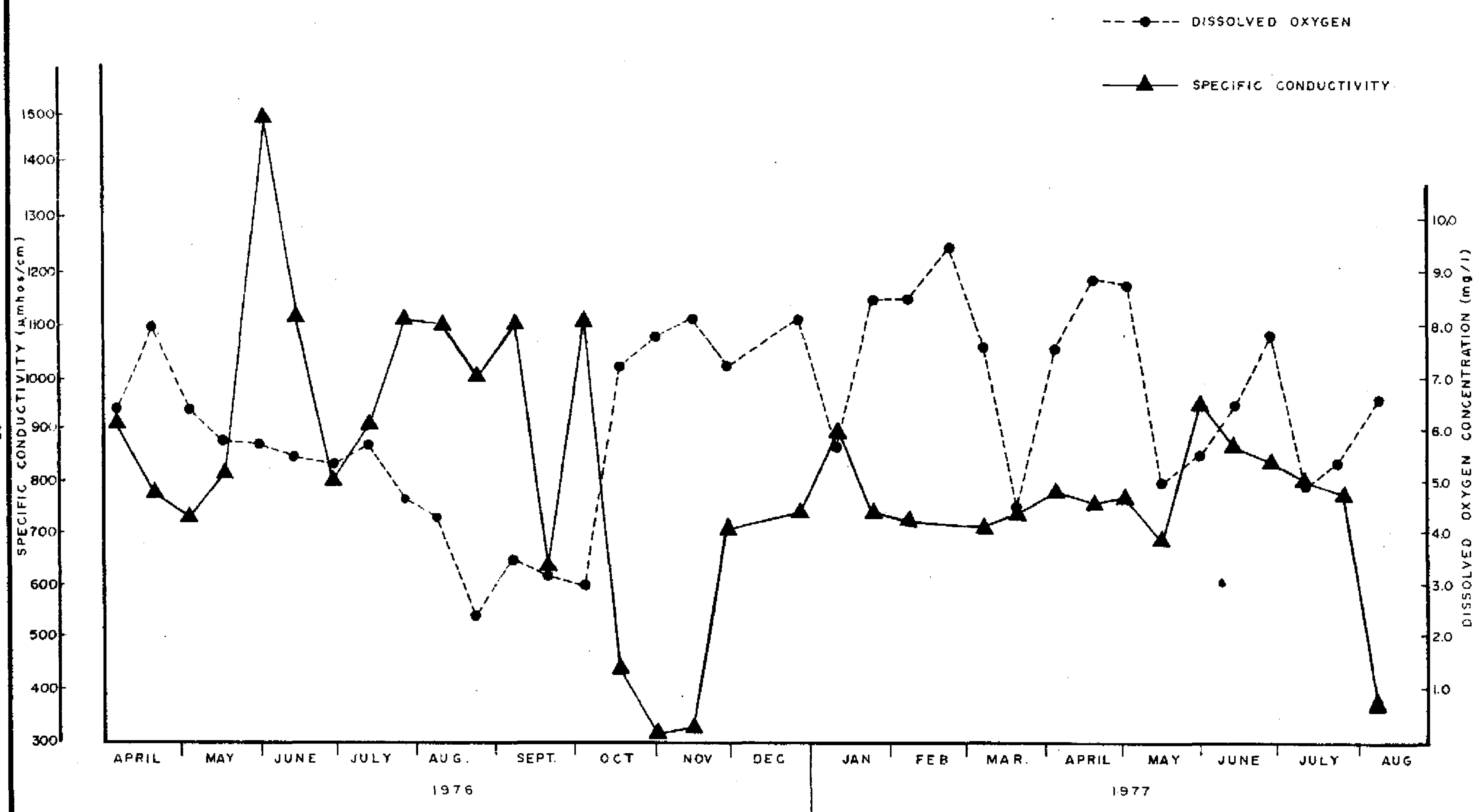


Figure IV-7 DISSOLVED OXYGEN AND SPECIFIC CONDUCTIVITY TRENDS IN THE MIAMI CANAL AT PUMP STATION 3

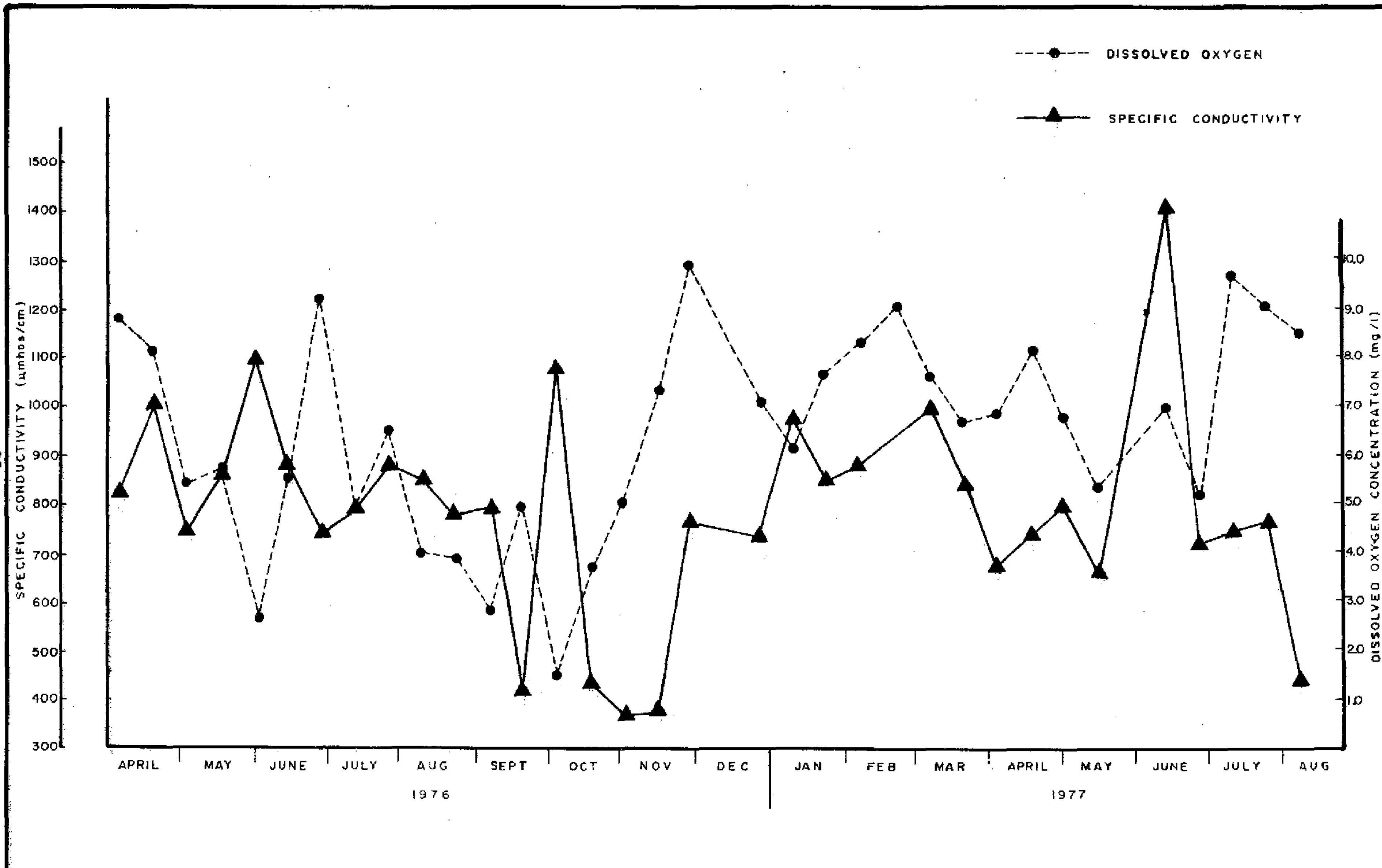


Figure IV-8 DISSOLVED OXYGEN AND SPECIFIC CONDUCTIVITY TRENDS IN CANAL 20 AT PUMP STATION 4

Effects of Backpumping on the Water Quality of Lake Okeechobee

Rim Canal

In the preceding section high total nitrogen levels were documented as the most significant water quality characteristic of backpumped waters especially for S-2 and S-3. Total nitrogen, therefore, can be considered as the primary indicator of the areal extent of the effects of backpumping on the water quality of Lake Okeechobee. Other noticeable characteristics of backpumped waters included high specific conductivities at all three pump stations and moderately high total phosphorus concentrations at S-4. These parameters may serve as secondary indicators of the areal extent of backpumping.

Water backpumped through S-2, S-3, and S-4 is discharged directly into the Rim Canal of Lake Okeechobee. The most noticeable effects of backpumping on the water quality of the Lake would therefore be expected to be observed in the Rim Canal near the vicinity of the pump stations with the impact becoming less pronounced further away from the discharge sources. Displayed in Figure IV-9 are the mean surface and bottom total nitrogen values and ranges along the Rim Canal during the periods of backpumping and no backpumping. The data presented in Figure IV-9 was tested statistically using a two-way nested analysis of variance (ANOVA) in order to identify factors which significantly affected the measured total nitrogen concentrations. Factors considered were the station location (Station), the depth at which the sample was collected (Depth) and whether or not backpumping was occurring (Discharge). A review of Figure IV-9 suggests that there was little difference between the mean total nitrogen concentrations at the surface and the mean concentrations at the bottom. This observation was supported statistically by the results of the ANOVA (Table IV-4) which indicated no significant difference between mean surface and bottom total nitrogen concentrations. The data in Figure IV-9

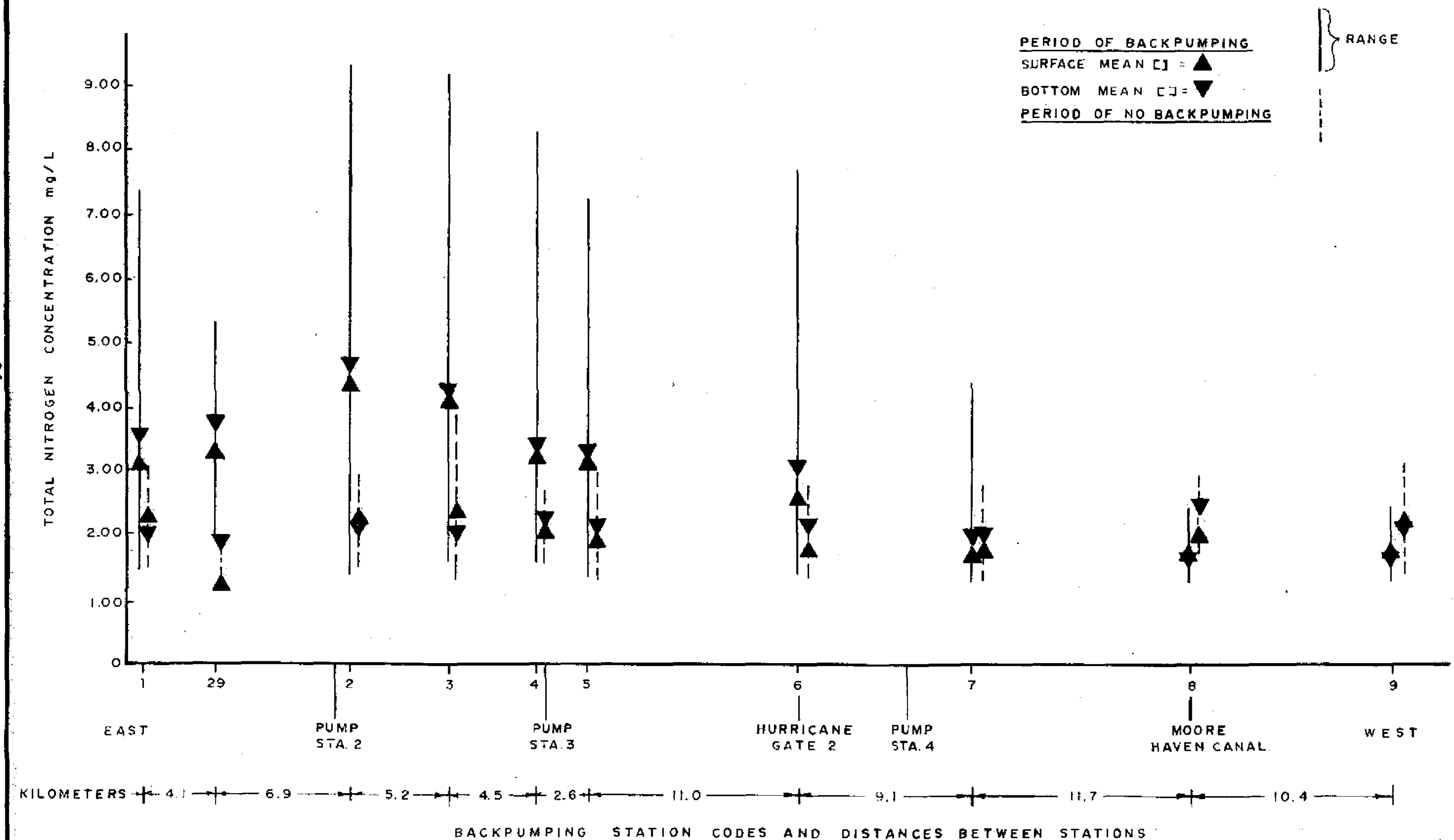


Figure IV-9 TOTAL NITROGEN CONCENTRATIONS ALONG THE RIM CANAL DURING SAMPLING PERIODS FROM APRIL 1976 THROUGH AUGUST 1977

TABLE IV-4. SUMMARY OF RESULTS OF TWO-WAY NESTED ANALYSIS OF VARIANCE FOR RIM CANAL STATIONS

Source	Total Nitrogen	Inorganic Nitrogen	Organic Nitrogen	Total Phosphorus	Ortho Phosphorus	Dissolved Oxygen	Conductivity	Turbidity
Station	*	*	*	*	*	*	*	*
Depth (station)	NS	NS	NS	NS	NS	*	NS	NS
Discharge	*	*	NS	*	*	*	NS	NS
Station X Discharge	*	*	NS	NS	NS	*	*	NS
Depth X Discharge (Depth)	NS	NS	NS	NS	NS	NS	NS	NS

NOTE: * = significant at the 95 percent confidence level

NS = not significant at the 95 percent confidence level also displays a distinct trend with the highest total nitrogen concentrations during backpumping occurring in the vicinity of S-2, and gradually tapering off east and west of S-2. During no backpumping total nitrogen concentrations were lower and relatively constant between all the Rim Canal stations. At Station 2 near S-2 the average total nitrogen concentration during backpumping was 4.5 mg/l which was over twice as high as the average concentration during no backpumping (2.1 mg/l). The maximum total nitrogen concentrations at Station 2 reflect even greater differences with the maximum concentration during backpumping (9.37 mg/l) being over three times as high as the maximum concentration during no backpumping (2.9 mg/l). East of S-2 total nitrogen concentrations during backpumping gradually decrease but still remain substantially higher than during periods of no backpumping. At Station 1, near Pahokee, the most eastward station in the study area, total nitrogen concentration during backpumping averaged 3.3 mg/l while during non-backpumping periods the average was 2.1 mg/l. West of S-2 total nitrogen concentrations also tapered off during backpumping but remained substantially higher than during periods of no backpumping until around Station 6 at Hurricane Gate 2. Discharge from S-3 and S-4 did not appear to cause appreciable increases in the Rim Canal total nitrogen levels although their discharge may have prevented total nitrogen discharged by S-2 from decreasing more rapidly. West of Station 6 (at Stations 7, 8 and 9) mean total nitrogen levels during backpumping were either equal to or less than total nitrogen levels during periods of no backpumping, ranging from 2.0 to 2.5 mg/l. The ANOVA performed on the data represented by Figure IV-9 support the above general trends and also provide a quantitative method of delineating the westward limit of elevated total nitrogen concentrations resultant from backpumping. The results of the ANOVA (Table IV-4) indicate a station X discharge interaction which can be interpreted as meaning the magnitude of the total nitrogen concentrations along the Rim Canal was dependent upon whether or not backpumping (discharge) was occurring. Due to this interaction, it was necessary to test for differences among total nitrogen concentrations between the stations during backpumping and non-backpumping periods separately. The results of these tests (Table IV-5) indicate that during backpumping, Stations 1 through 5 have significantly higher total nitrogen concentrations than Stations 7, 8, and 9. This supports the previous conclusion that stations west of Station 6 did not appear affected by elevated nitrogen levels during backpumping. Since total nitrogen levels at Station 6 were not significantly lower than Stations 4 and 5 and were also not significantly higher than Stations 7, 8 and 9, it appears that Station 6 was in the transition zone of the westward limit of the effects of elevated total nitrogen levels attributable to backpumping. During periods of no backpumping there was no significant difference between the mean total nitrogen concentrations at any station along the Rim Canal (Table IV-6).

Figures IV-10 and IV-11 are similar to Figure IV-9 except that they depict inorganic and organic nitrogen concentrations along the Rim Canal. Evaluation of Figures IV-10 and IV-11 suggest that elevated total nitrogen concentrations during backpumping were the result of increases in inorganic nitrogen concentrations and not organic nitrogen concentrations. Inorganic nitrogen concentrations along the Rim Canal (Figure IV-10) paralleled the same basic pattern illustrated in Figure IV-9 for total nitrogen. The highest average inorganic nitrogen levels during backpumping occurred around S-2 with the levels decreasing east and west of Station 2. Inorganic nitrogen levels during non-backpumping periods were uniformly low throughout the Rim Canal. Organic nitrogen levels did not exhibit the same patterns as did total and inorganic nitrogen, instead organic nitrogen remained relatively constant along the Rim Canal. The assumption that changes in total nitrogen in the Rim Canal during backpumping

TABLE IV-5. **RESULTS OF DUNCAN'S MULTIPLE RANGE TEST** FOR TOTAL NITROGEN, INORGANIC NITROGEN, DISSOLVED OXYGEN, AND CONDUCTIVITY DURING BACKPUMPING

Total Nitrogen (mg/l)

Station	2	3	1	4	5	6	7	9	8
mean	4.56	4.13	3.33	3.25	3.21	2.90	1.87	1.76	1.74

Inorganic Nitrogen (mg/l)

Station	2	3	1	4	5	6	8	7	9
mean	1.88	1.55	1.08	1.01	1.01	0.91	0.30	0.25	0.16

Dissolved Oxygen (mg/l)

Station	4	1	5	3	9	8	7	2	6
mean	5.51	5.48	5.04	4.54	4.40	4.33	4.08	3.82	3.59

Conductivity (μmho/cm)

Station	1	2	3	5	4	6	7	9	8
mean	1035	1021	951	898	862	754	542	472	465

NOTE: Means connected by the same line are not significantly different at $\partial = 0.05$ level.

Means not connected by the same line are significantly different at $\partial = 0.05$ level.

TABLE IV-6. RESULTS OF DUNCAN'S MULTIPLE RANGE TEST FOR TOTAL NITROGEN, INORGANIC NITROGEN, DISSOLVED OXYGEN, AND CONDUCTIVITY DURING NO BACKPUMPING

Total Nitrogen (mg/l)

Station	8	9	3	2	1	4	5	6	7
mean	2.28	2.22	2.20	2.20	2.15	2.15	2.08	2.00	1.91

Inorganic Nitrogen (mg/l)

Station	8	1	9	4	5	2	6	3	7
mean	.302	.244	.235	.185	.155	.151	.140	.134	.121

Dissolved Oxygen (mg/l)

Station	5	3	6	2	1	4	9	7	8
mean	7.80	7.74	7.64	6.99	6.80	5.86	5.58	5.55	4.18

Conductivity (μmho/cm)

Station	3	2	1	4	5	6	8	7	9
mean	860	841	817	783	759	753	736	683	640

NOTE: Means connected by the same line are not significantly different at a = 0.05 level.

Means not connected by the same line are signifcantly different at a = 0.05 level.

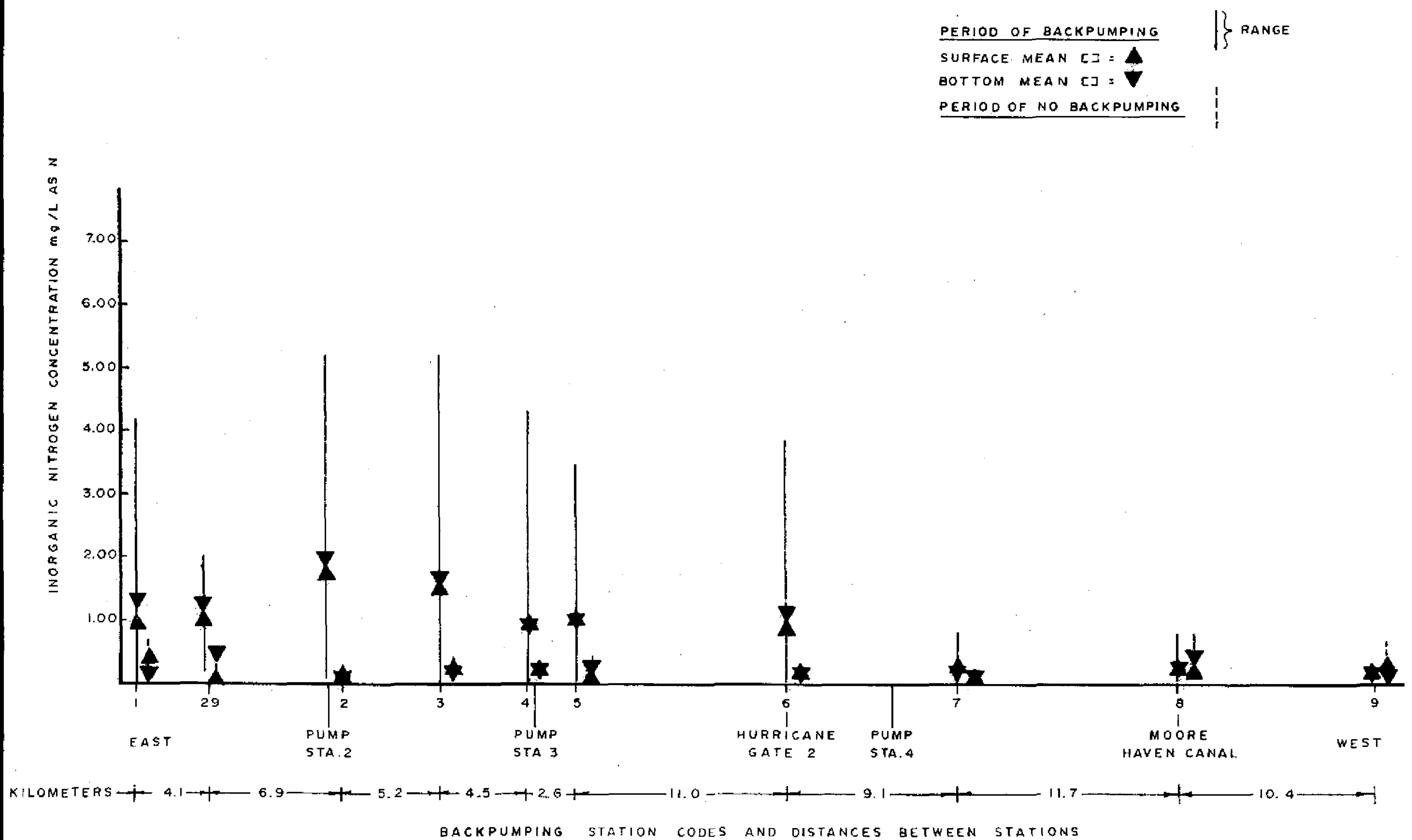


Figure IV-10 INORGANIC NITROGEN CONCENTRATIONS ALONG THE RIM CANAL DURING SAMPLING PERIODS FROM APRIL 1976 THROUGH AUGUST 1977

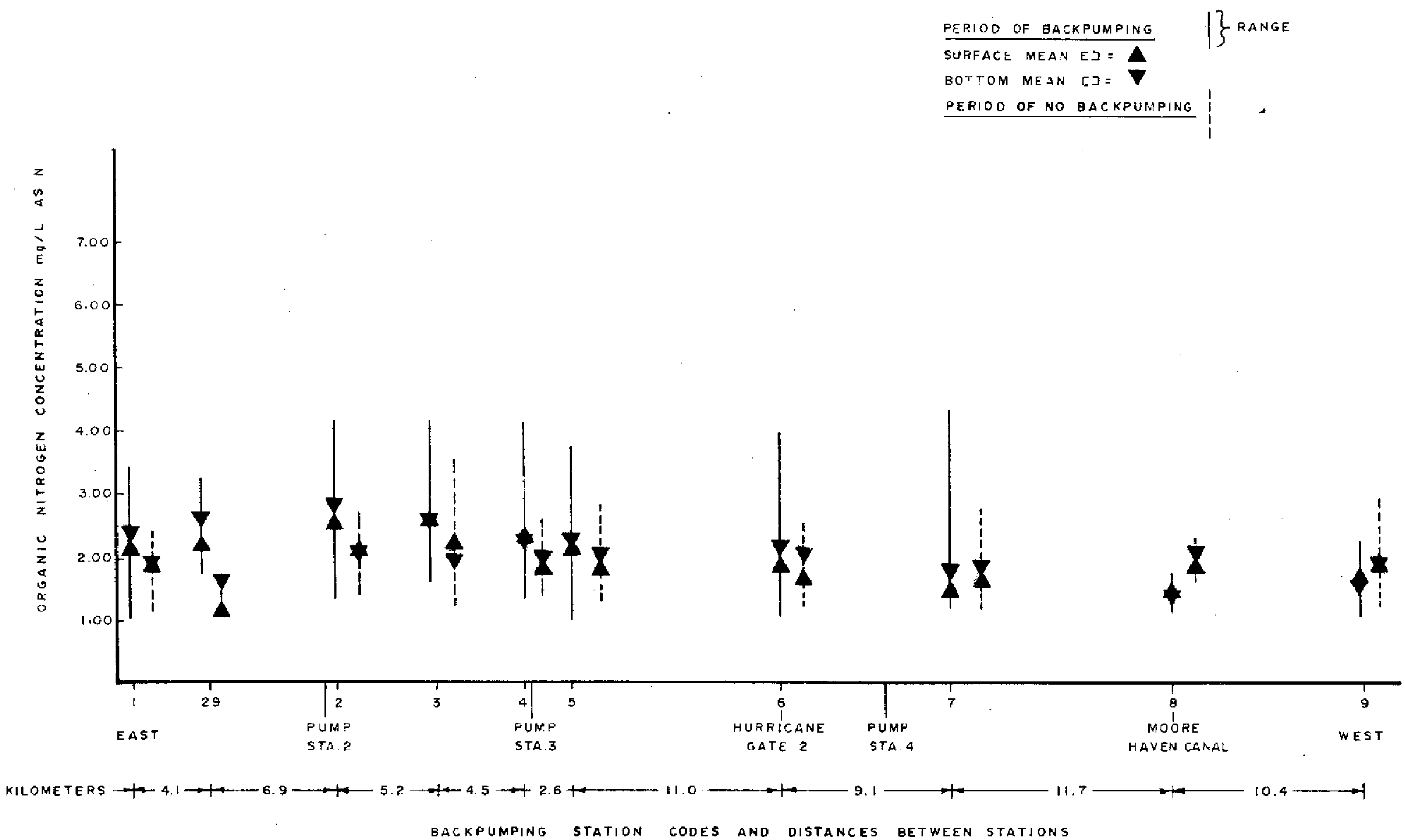


Figure IV-11 ORGANIC NITROGEN CONCENTRATIONS ALONG THE RIM CANAL DURING SAMPLING PERIODS FROM APRIL 1976 THROUGH AUGUST 1977 is mostly a result of high inorganic nitrogen levels is further supported by the discussion in an earlier section of the water quality characteristics of S-2 and S-3 discharge. That discussion concluded that increases in flow weighted total nitrogen levels during backpumping were primarily the result of increases in the inorganic nitrogen fraction and not the organic nitrogen fraction. Statistical tests similar to the ones performed on total nitrogen were also performed on the inorganic and organic nitrogen data. The results of the statistical tests for inorganic nitrogen (Table IV-4) parallels the results presented for total nitrogen. As with total nitrogen the magnitude of the inorganic nitrogen concentrations measured at the stations along the Rim Canal depended upon whether or not backpumping was occurring. Similarily stations east of Station 7 had significantly higher inorganic nitrogen levels than stations west of Station 6 (Table IV-5). This also supports the visual observations of the data presented in Figure IV-10. Results of the statistical tests for organic nitrogen were different than those reported for total and inorganic nitrogen. The ANOVA for organic nitrogen indicates that there were significant differences among stations but that these differences were not related to whether or not a backpumping event was occurring (Table IV-4). Backpumping, therefore, does not appear to directly influence the organic nitrogen concentration along the Rim Canal. Results of further statistical analysis on organic nitrogen, however, indicate that Stations 1 through 5 have significantly higher organic nitrogen concentrations than Station 7 through 9 irregardless of whether or not backpumping was occurring (Table IV-7). This implies that organic nitrogen levels were higher in areas of the Rim Canal that were impacted by high inorganic nitrogen levels during backpumping, but that these increases in organic nitrogen were not immediately evident.

The trend exhibited by total phosphorus concentrations in the Rim Canal displayed a somewhat similar cause/effect relationship as was apparent in the

TABLE IV-7. RESULTS OF DUNCAN'S MULTIPLE RANGE TEST FOR ORGANIC NITROGEN AND TURBIDITY DURING ALL SAMPLING PERIODS

Organic Nitrogen (mg/1)

Station	2	3	4	1	5	6	9	7	8
mean	2.52	2.44	2.16	2.15	2.12	1.95	1.71	1.67	1.59

Turbidity (JTU)

Station	2	1	3	6	5	4	7	9	8
mean	7.61	6.72	5.68	5.53	5.31	4.89	2.48	2.38	1.70

NOTE: Means connected by the same line are not significantly different at a = 0.05 level.

Means not connected by the same line are significantly different at a = 0.05 level.

total nitrogen data. The highest total phosphorus concentrations measured in the Rim Canal were in the vicinity of S-4 (Station 6) (Figure IV-12) which was the source of the highest flow weighted inflow concentrations of phosphorus. This association between the point of discharge and the major zone of influence is similar to that observed for total nitrogen where the highest concentrations measured in the Rim Canal were in the vicinity of S-2 which was the source of the highest flow weighted nitrogen inflow concentrations. Station 6 near S-4 had a mean total phosphorus value of 0.13 mg/l during backpumping, which was about 3 times higher than the mean total phosphorus concentration of 0.045 mg/l during no backpumping. Even more dramatic was the difference between the maximum total phosphorus concentrations measured at Station 6. During non-backpumping periods the highest total phosphorus level measured at Station 6 was 0.1 mg/l, but during backpumping the maximum value was six times higher at 0.6 mg/l. Total phosphorus levels decreased during backpumping east of Station 6 to Station 4 (near S-3). Between Stations 4 and 29 average total phosphorus levels increased slightly from 0.06 mg/l to 0.10 mg/l. This increase may have been the result of backpumping through S-3 and S-4. Further east at Station 1 the average total phosphorus concentration decreased to 0.065 mg/l.

West of S-4 the average total phosphorus concentration decreased to 0.09 mg/l at Station 7 and remained at that level to the most westward station (Station 9). Results of the analysis of variance of the total phosphorus data (Table IV-4) indicated that station location and backpumping were significant factors influencing the total phosphorus levels in the Rim Canal. However, since there was no significant interaction between these two factors the analysis can be interpreted as meaning that although there were significant differences between stations and between backpumping and non-backpumping periods, discharges during backpumping periods influenced the total phosphorus concentrations to the same degree at all stations. Further statistical analysis of

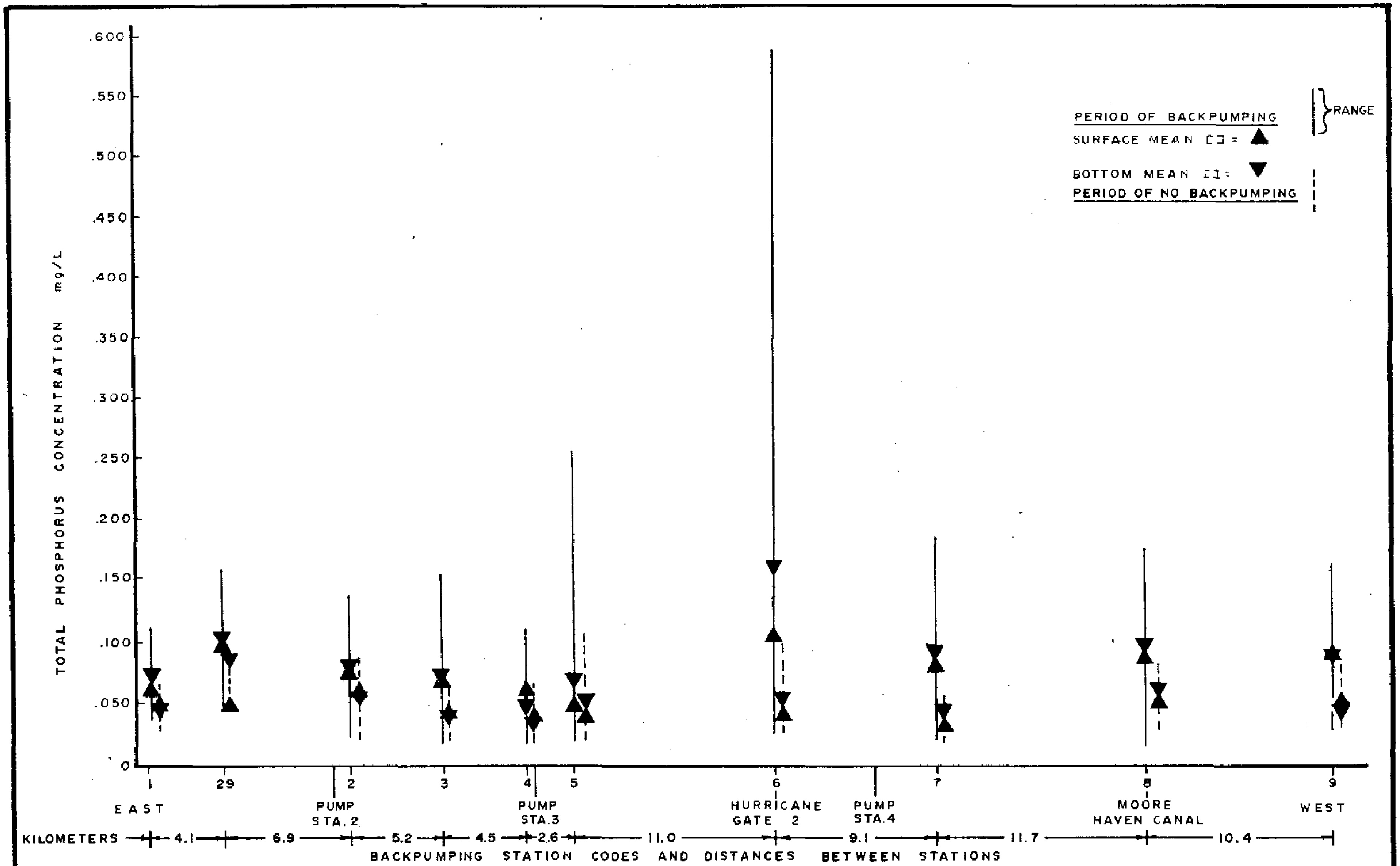


Figure IV-12 TOTAL PHOSPHORUS CONCENTRATIONS ALONG THE RIM CANAL DURING SAMPLING PERIODS FROM APRIL 1976 THROUGH AUGUST 1977 the total phosphorus data (Table IV-8) indicates that Station 6 at Hurricane Gate 2 has significantly higher concentration than all the other stations in the Rim Canal with the exception of Station 8 near Moore Haven. This is consistent with a visual inspection of Figure IV-12. The lack of an apparent westward limit, at least as far as Station 9, to the effects of backpumping on total phosphorus concentrations are probably the result of moderately high total phosphorus concentrations (0.16 mg/l) being discharged near Station 9 (Fisheating Bay) by Fisheating Creek (SFWMD unpublished). Like backpumping, discharge by Fisheating Creek is primarily a wet season phenomenon. This would also explain the lack of a station X discharge interaction for total phosphorus as was observed for total nitrogen. The boundary of the effects of backpumping and Fisheating Creek discharge, therefore, is not distinct.

Figure IV-13 displays the mean values and ranges of ortho-phosphorus along the Rim Canal. The pattern displayed in this figure parallels the pattern observed for total phosphorus with peak values occurring at Station 6 (Hurricane Gate 2), subsequently tapering off to a constant level to the west and fluctuating to the east near S-2. This suggests that ortho-phosphorus was mainly responsible for the fluctuation observed for total phosphorus.

Dissolved oxygen concentrations along the Rim Canal are presented in Figure IV-14. Bottom dissolved oxygen concentrations are significantly lower than surface values (Tables IV-4, IV-5, and IV-6). In general, dissolved oxygen concentrations were lower during backpumping periods at Stations 2 through 7 which were in the vicinity of the three pump stations. At the eastern and western ends of the Rim Canal the dissolved oxygen concentrations at the surface during backpumping were similar to non-backpumping periods although the bottom concentrations were substantially lower.

Figure IV-15 displays specific conductance along the Rim Canal. Conductance was high during both backpumping and non-backpumping periods. However

TABLE IV-8. RESULTS OF DUNCAN'S MULTIPLE RANGE TEST FOR TOTAL PHOSPHORUS AND ORTHO PHOSPHORUS DURING ALL SAMPLING PERIODS

Total Phosphorus

Station	6	8	9	7	2	1	3	5	4
Mean	.109	.086	.074	.073	.072	.062	.062	.054	.050

Ortho Phosphorus

Station	6	8	9	7	2	1	3	4	5
Mean	.072	.052	.046	.043	.040	.033	.028	.023	.020

NOTE: Means connected by the same line are not significantly different at $a = 0.05$ level

Means not connected by the same line are significantly different at $a = 0.05$ level

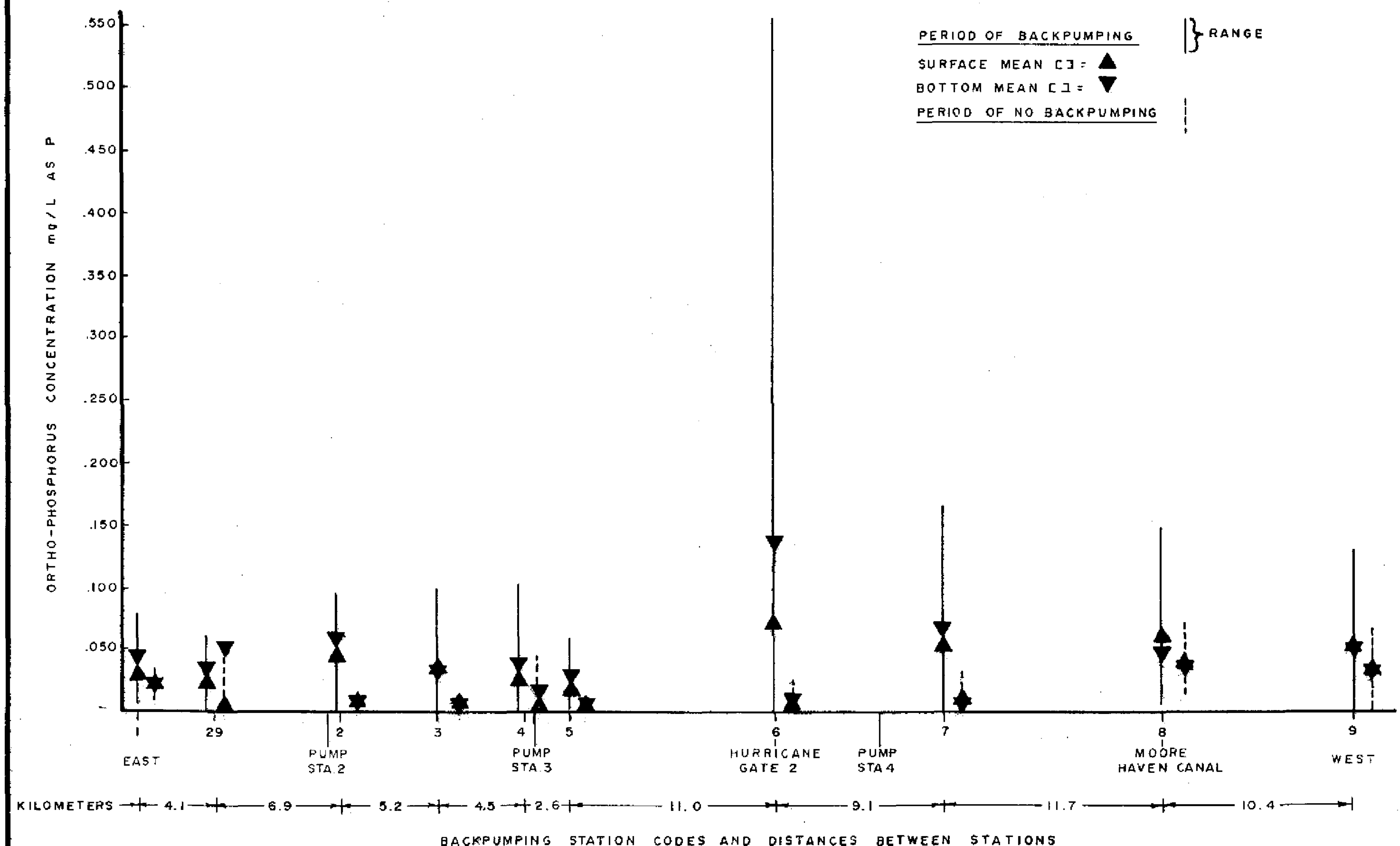


Figure IV-13 ORTHO-PHOSPHORUS CONCENTRATIONS ALONG THE RIM CANAL DURING SAMPLING PERIODS FROM APRIL 1976 THROUGH AUGUST 1977

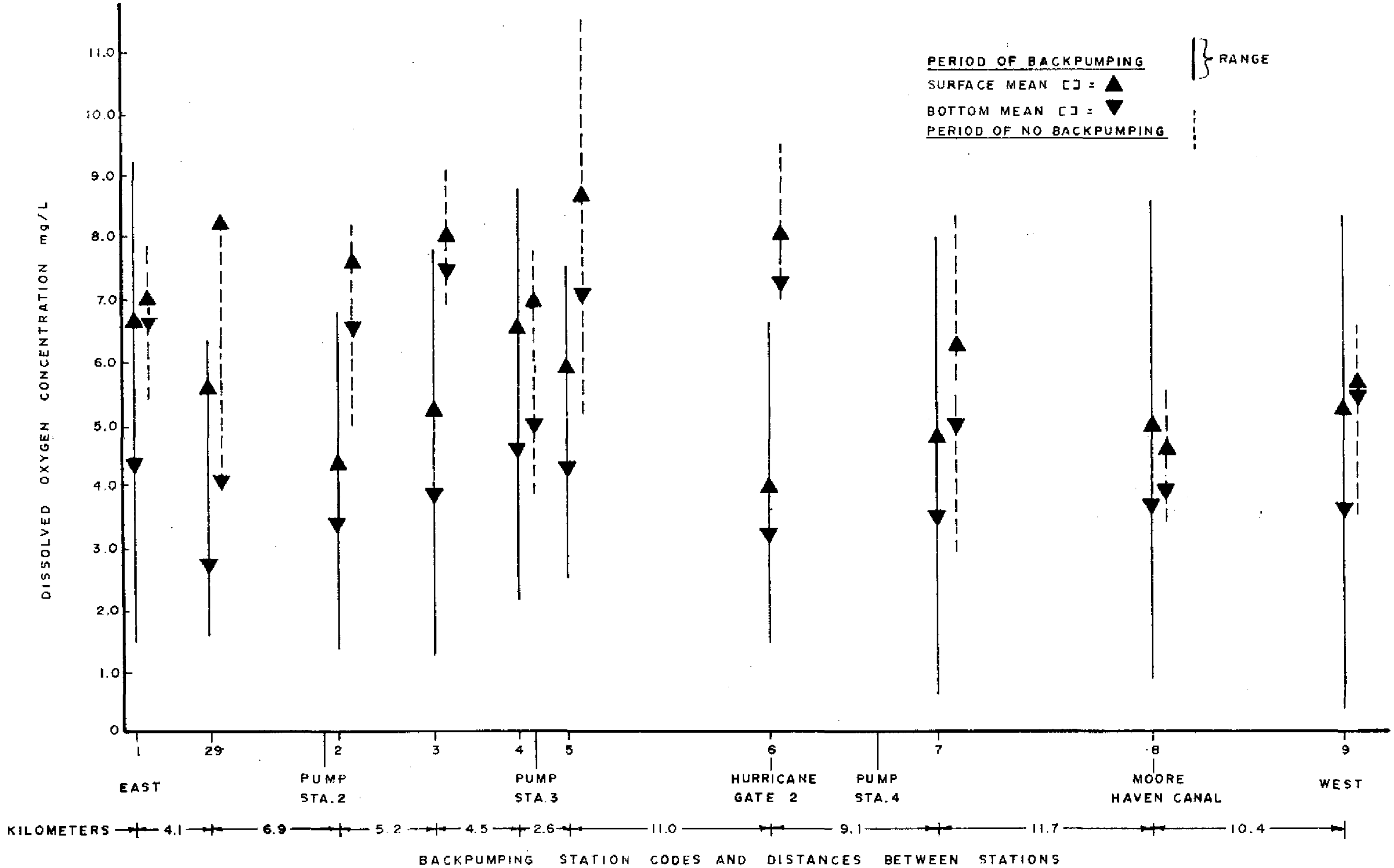


Figure IV-14 DISSOLVED OXYGEN CONCENTRATIONS ALONG THE RIM CANAL DURING SAMPLING PERIODS FROM APRIL 1976 THROUGH AUGUST 1977

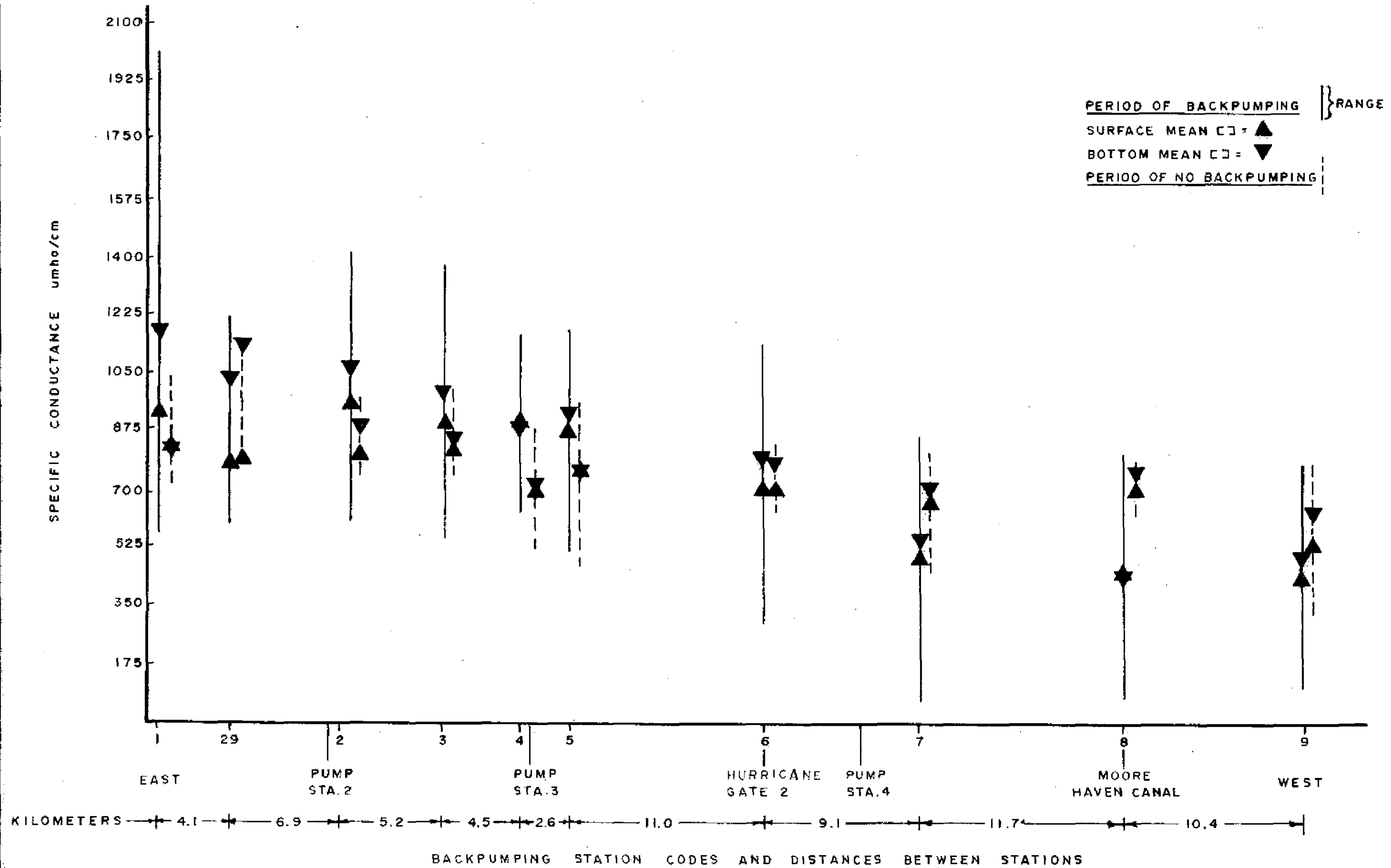


Figure IV-15 SPECIFIC CONDUCTANCE ALONG THE RIM CANAL DURING SAMPLING PERIODS FROM APRIL 1976 THROUGH AUGUST 1977 differences between the two periods are evident. Statistical analysis of specific conductance was performed in a manner similar to total nitrogen. The results of the tests (Tables IV-5 and IV-6) on conductance paralleled those presented for total nitrogen. A station/discharge interaction was observed for conductance as it was for total nitrogen indicating that the effects of backpumping depends on the location in the Rim Canal. Further analysis (Table IV-5) indicated that during backpumping, stations west of S-4 (Stations 7, 8, and 9) had significantly lower conductivities than stations east of S-4 (Stations 1 through 6). Again it appears that the area around Hurricane Gate 2 and S-4 are the western limits of the immediate water quality effects of backpumping through S-2 and S-3.

The low turbidity values along the Rim Canal displayed in Figure IV-16 further supports the contention presented in an earlier section that turbidity is not a parameter associated with backpumping. The statistical analysis presented in Table IV-4 also supports this contention by indicating that backpumping had no significant effect on turbidity levels. This appears logical since there is a lack of a significant slope in the drainage basin thereby allowing suspended particles an opportunity to settle out of the water column. This is contrary to the high degree of association between agriculture runoff and turbidity found in most other parts of the county.

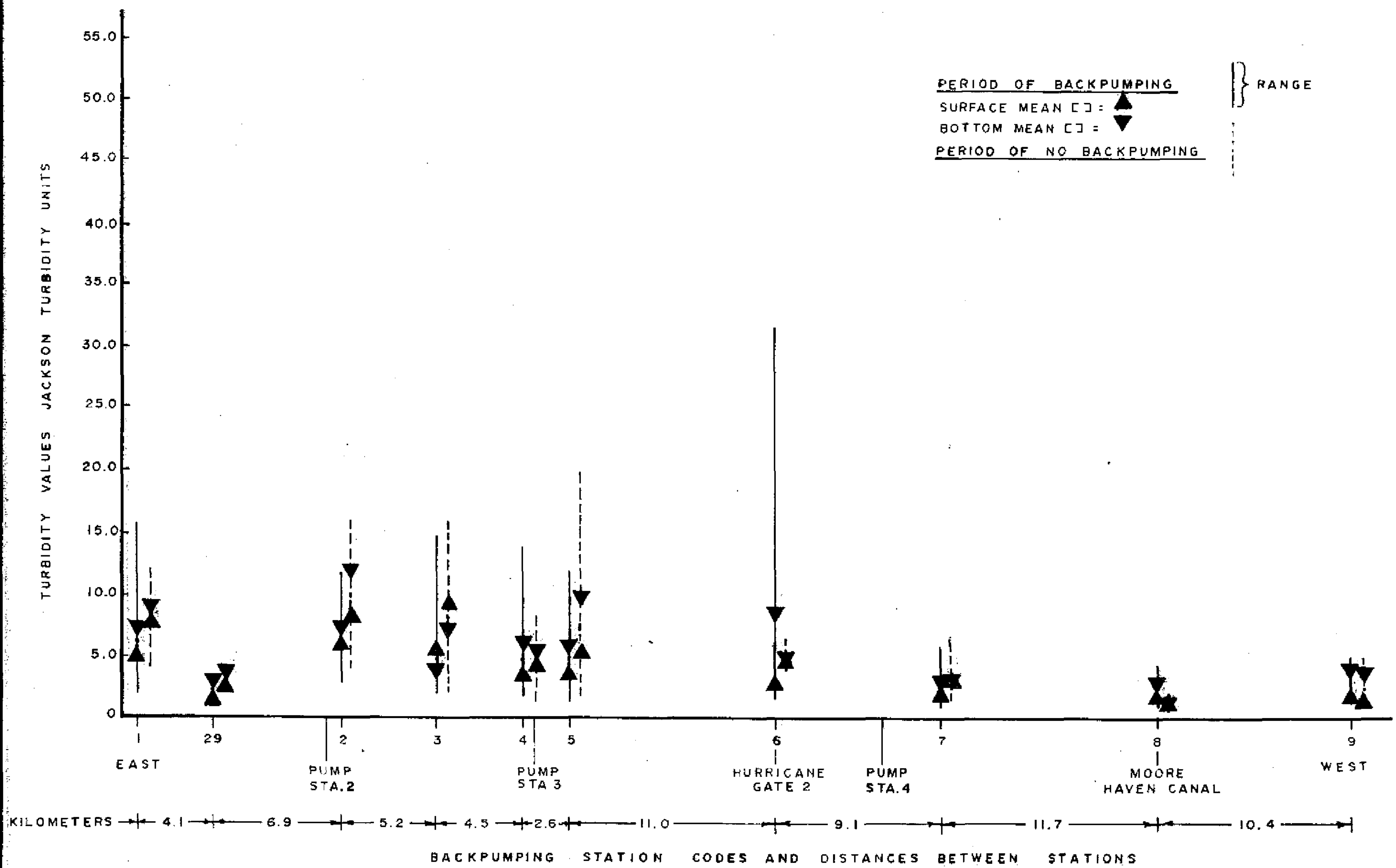


Figure IV-16 TURBIDITY VALUES ALONG THE RIM CANAL DURING SAMPLING PERIODS FROM APRIL 1976 THROUGH AUGUST 1977

South Bay Area

Water backpumped via S-2, S-3, and S-4 can flow into the South Bay area of Lake Okeechobee through intermittent breaks in the Rim Canal. A South Bay transect was established extending from S-2 16 km to Station 15 in the limnetic zone in order to monitor the northward extent of the water quality effects of backpumping in Lake Okeechobee. Stations along the transect provided a good indication of the effects of backpumping since S-2 is the major source of backpumped waters and is the largest source of nitrogen. High phosphorus levels being discharged by S-4 were probably not completely monitored by this transect.

Figure IV-17 displays total nitrogen concentrations along the South Bay transect. At Station 2 near S-2 total nitrogen concentrations during backpumping were high, averaging 4.6 mg/l with a maximum value of 9.37 mg/l. These backpumping values were over twice as high as the average non-backpumping total nitrogen concentration of 2.2 mg/l and over three times as high as the maximum non-backpumping concentration of 2.9 mg/l. At Station 24, located 0.37 km north of S-2 along the transect, the average and maximum total nitrogen concentrations during backpumping were essentially unchanged remaining 2 to 3 times higher than during non-backpumping periods. Total nitrogen levels during backpumping exhibited a small decline at Station 25, located in the middle of South Bay approximately 3 km north of S-2. At this point along the transect the mean total nitrogen concentration during backpumping decreased to about 3.4 mg/l; however, the maximum concentration was still very high at 8.56 mg/l. During non-backpumping periods total nitrogen concentrations at Station 25 also decreased slightly to an average of about 1.7 mg/l. The northern South Bay station, Station 26 located approximately 6 1/2 km north of S-2, exhibited a substantially reduced average total nitrogen concentration of 1.9 mg/l during backpumping. This was only slightly above the average concentration of 1.35

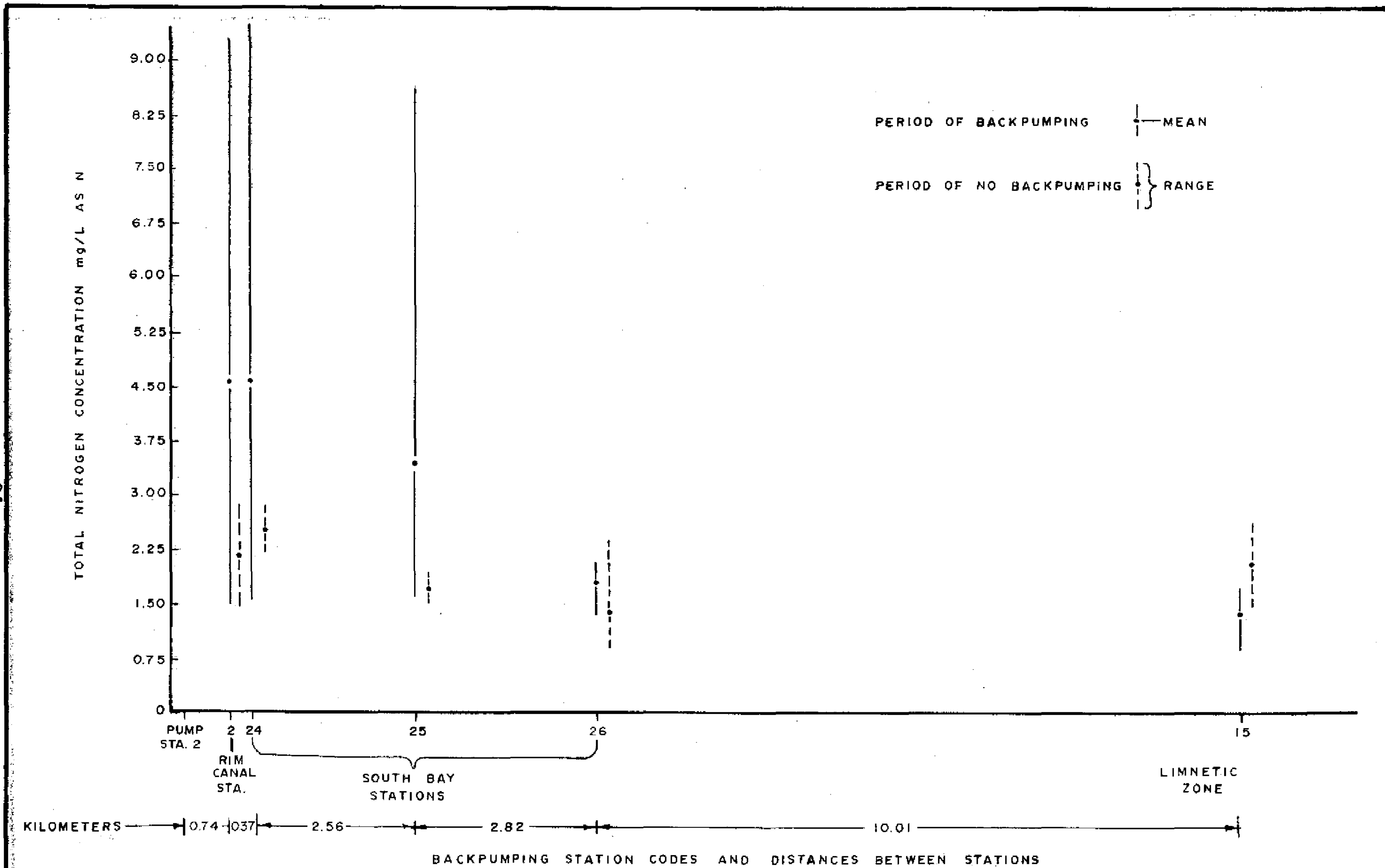


Figure IV-17 TOTAL NITROGEN CONCENTRATION vs. DISTANCE FROM PUMP STATION TWO DURING SAMPLING PERIODS FROM APRIL 1976 THROUGH AUGUST 1977 mg/l during non-backpumping periods. In addition the maximum total nitrogen concentration measured at Station 26 during backpumping (2.05 mg/l) was less than the maximum concentration measured during non-backpumping periods (2.44 mg/l). Ten kilometers further northward from Station 26 in the Lake's limnetic zone (Station 15) the average total nitrogen concentration during backpumping (1.3 mg/l) was less than during no backpumping (2.2 mg/l). This relationship also held true for the maximum total nitrogen values of 1.9 mg/l during backpumping and 2.53 mg/l during no backpumping. It therefore appears that backpumping causes total nitrogen concentrations to be extremely elevated in the vicinity of S-2 (at least up to 1.1 km) with the effect diminishing at a point 3.67 to 6.49 km (2.3 to 4.0 miles) north of S-2.

Inorganic nitrogen concentrations along the South Bay transect followed the same pattern as total nitrogen (Figure IV-18). Inorganic nitrogen concentrations were substantially higher during backpumping past Station 24 (1.11 km from S-2). At Station 25 (3.57 km from S-2) the differences between the mean inorganic nitrogen concentrations were reduced although there was a large difference in the maximum concentrations (4.38 vs 0.2 mg/l). At Station 26 (6½ km from S-2) the mean and maximum inorganic nitrogen concentrations were equal during backpumping and no backpumping and in the limnetic zone inorganic nitrogen concentrations were usually less during backpumping.

Organic nitrogen levels along the transect were affected to a lesser extent by backpumping than the inorganic fraction, although the same pattern and points of influence were apparent as they were for total and inorganic nitrogen (Figure IV-19).

Total phosphorus along the South Bay transect did not follow the same pattern that was observed for nitrogen. Only at Station 2 located 0.74 km from S-2 was the average total phosphorus concentration during backpumping higher than during no backpumping (Figure IV-20). At all the other stations along

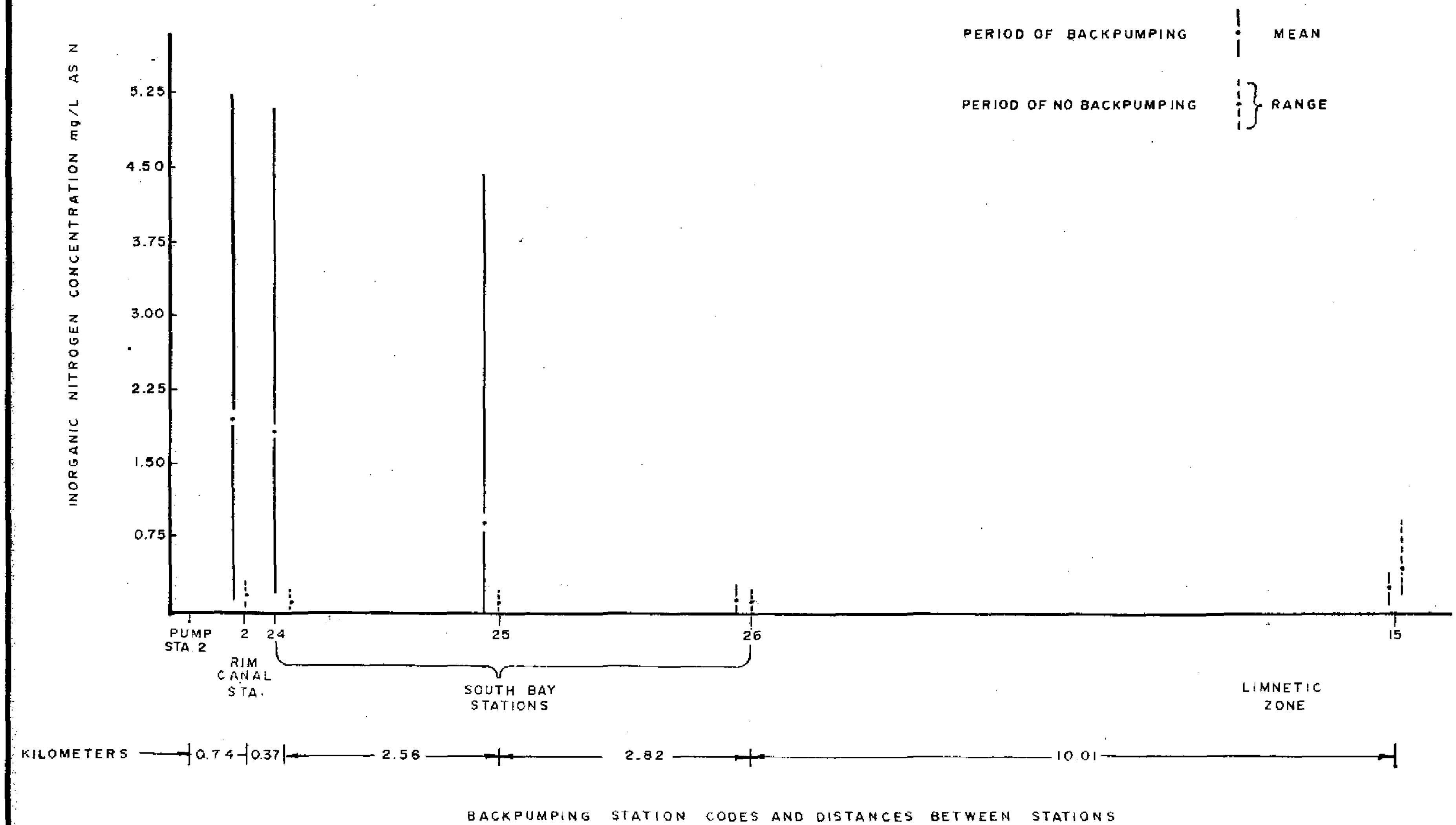


Figure IV-18 INORGANIC NITROGEN CONCENTRATION vs DISTANCE FROM PUMP STATION TWO DURING SAMPLING PERIOD FROM APRIL 1976 THROUGH AUGUST 1977

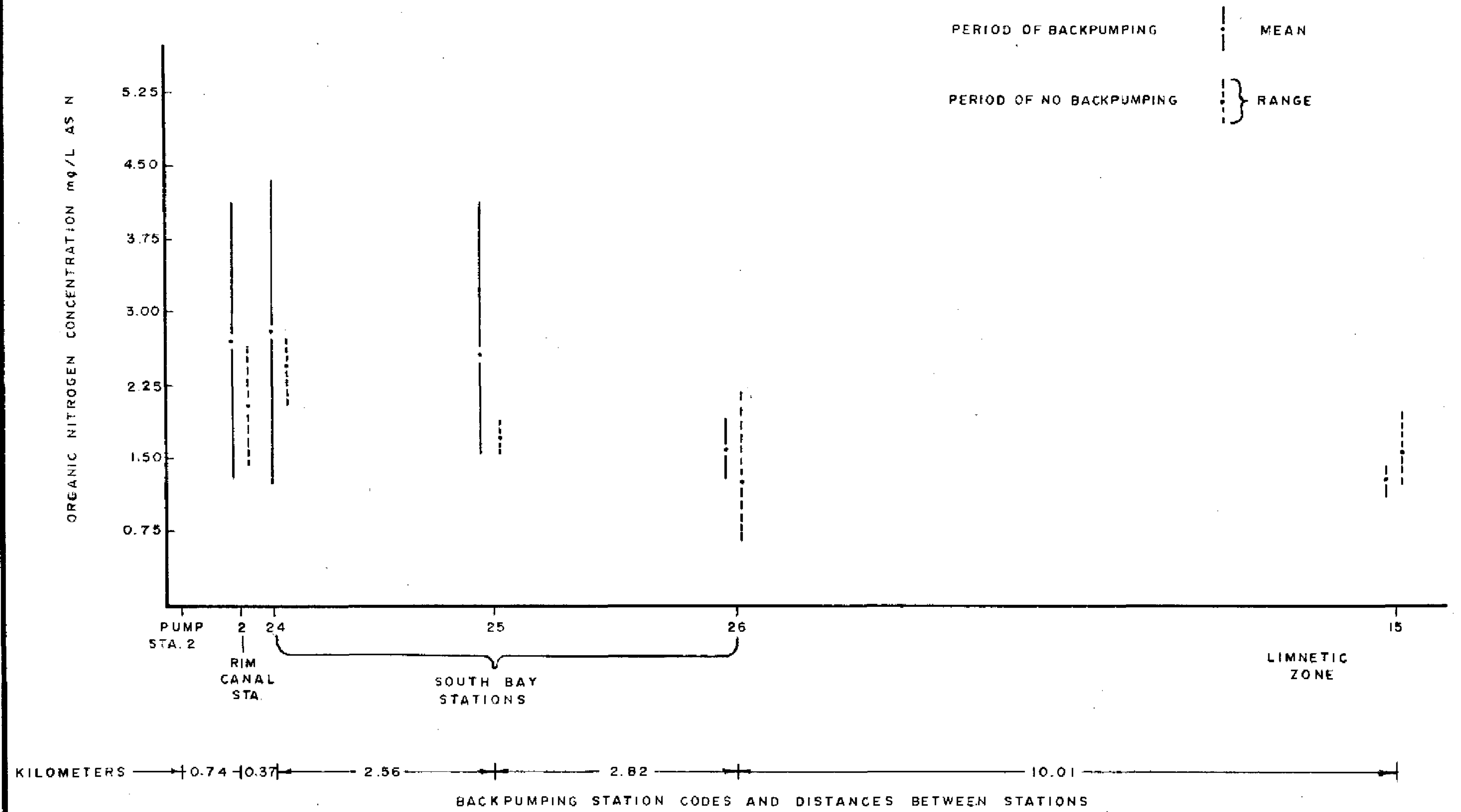


Figure IV-19 ORGANIC NITROGEN CONCENTRATION vs DISTANCE FROM PUMP STATION TWO DURING SAMPLING PERIODS FROM APRIL 1976 THROUGH AUG. 1977

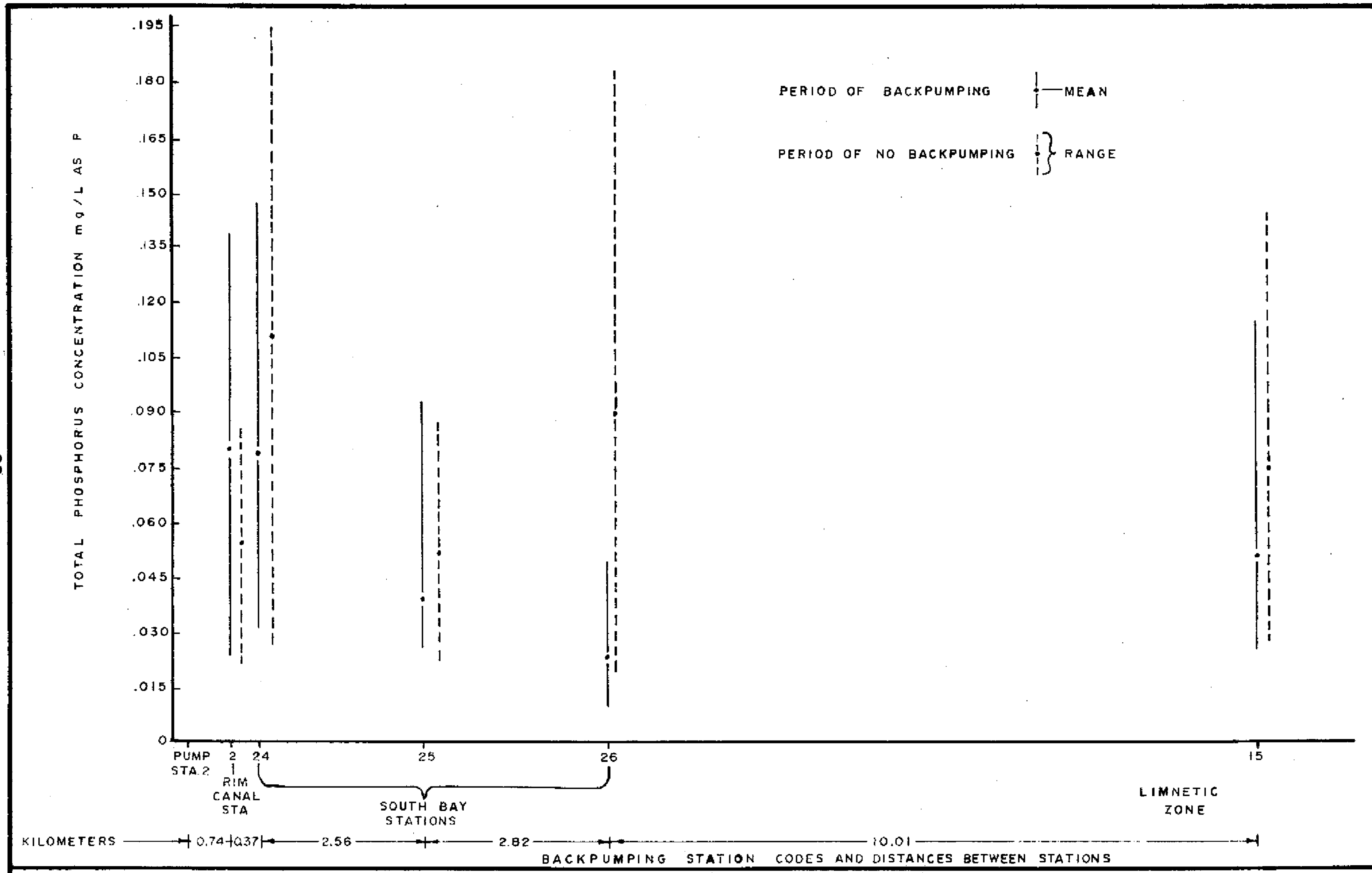


Figure IV-20 TOTAL PHOSPHORUS CONCENTRATION vs DISTANCE FROM PUMP STATION TWO DURING SAMPLING PERIODS FROM APRIL 1976 THROUGH AUG. 1977 the transect, total phosphorus levels during non-backpumping periods were higher than during backpumping periods. A different situation is presented when ortho-phosphorus along the transect is examined (Figure IV-21). Ortho-phosphorus followed a pattern similar to nitrogen. Mean ortho-phosphorus concentrations up to 1.1 km from S-2 (Stations 2 and 24) were 6 to 10 times higher during backpumping periods as compared to non-backpumping periods. In the middle of South Bay (Station 25) the mean total phosphorus concentrations during backpumping was 0.02 mg/l or 5 times higher than during no backpumping. The maximum ortho-phosphorus concentration at this station during backpumping (0.08 mg/l) was 16 times greater than the maximum concentration measured during no backpumping. North of Station 25, the trend is again reversed with non-backpumping concentrations usually being greater than backpumping values. It therefore appears that the major influence of S-2 on phosphorus levels was an increase in the ortho-phosphorus fraction in the same area of influence that was delineated by increases in total nitrogen. Total phosphorus did not appear to be appreciably increased during backpumping except in the immediate vicinity of S-2.

Dissolved oxygen concentrations along the South Bay transect followed an inverse relationship to total nitrogen. Dissolved oxygen concentrations near S-2 (Stations 2 and 24) were severely depressed during backpumping (Figure IV-21). At Station 2 (0.74 km north of S-2) the average dissolved oxygen concentration was 3.8 mg/l with a minimum value of 1.5 mg/l during backpumping as compared to a mean of 7.0 mg/l and a minimum of 5.0 mg/l during no backpumping. One-fourth of a kilometer further north the differences were even greater. The average dissolved oxygen concentration at Station 24 during backpumping increased slightly to 4.2 mg/l but during non-backpumping periods the average dissolved oxygen increased to 9.5 mg/l. The maximum concentration at this station during backpumping (8.9 mg/l) did not reach the minimum concentration during no backpumping (9.1 mg/l)

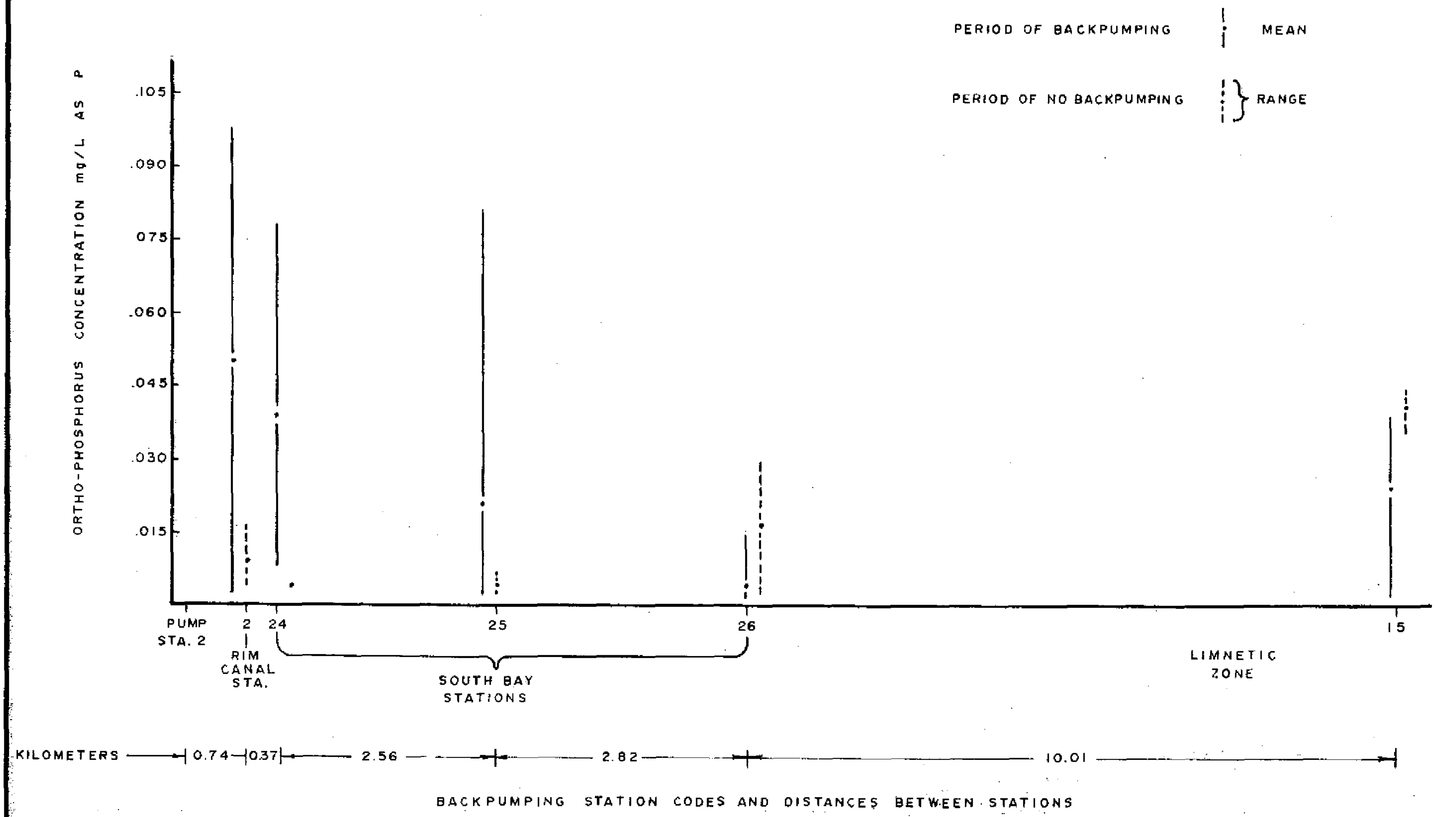


Figure IV-21 ORTHO-PHOSPHORUS CONCENTRATION vs DISTANCE FROM PUMP STATION TWO DURING SAMPLING PERIODS FROM APRIL 1976 THROUGH AUG. 1977

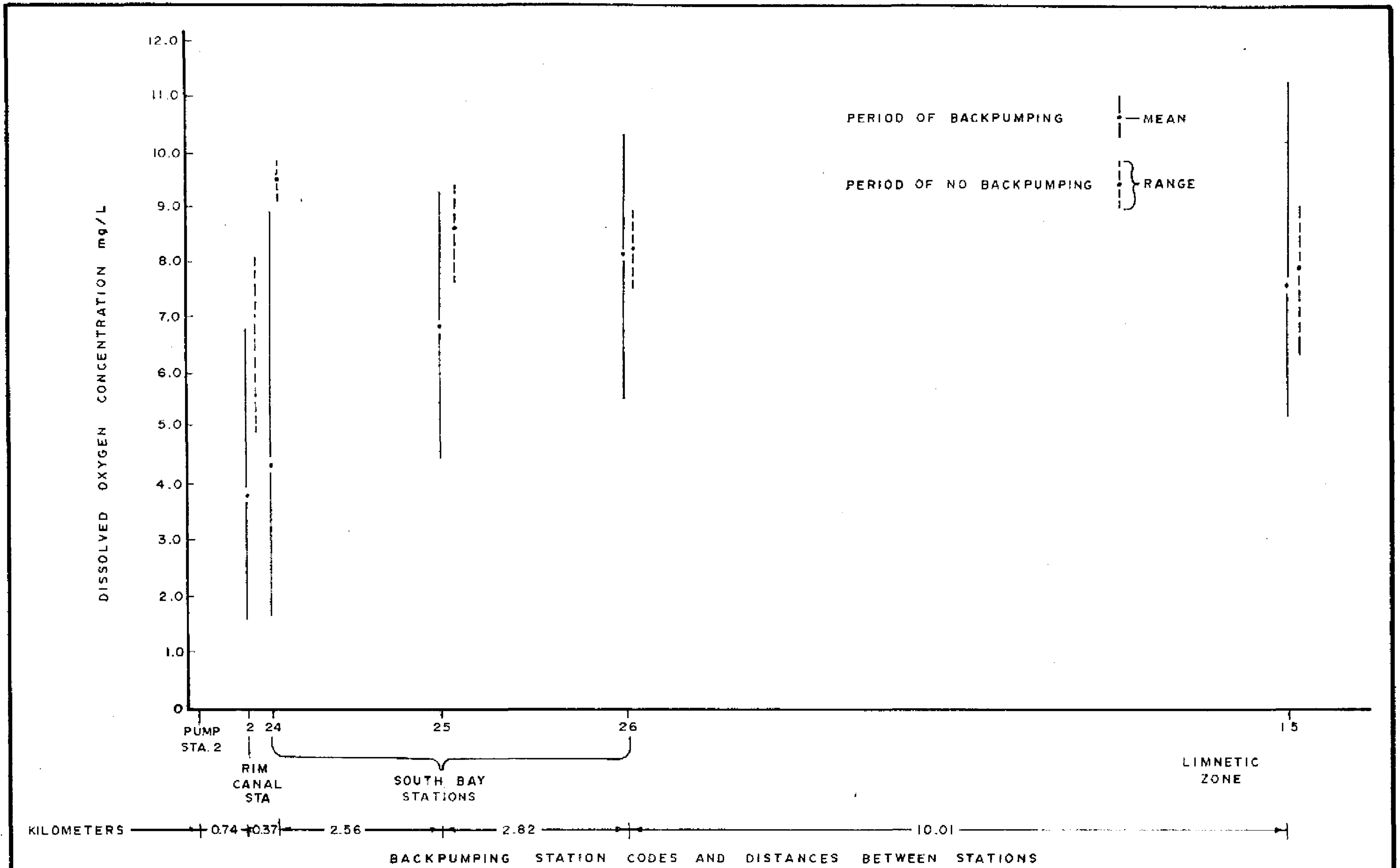


Figure IV-22 DISSOLVED OXYGEN CONCENTRATION vs DISTANCE FROM PUMP STATION TWO DURING SAMPLING PERIODS FROM APRIL 1976 THROUGH AUGUST 1977 although both values were high. In mid South Bay (Station 25) approximately 3.67 km from S-2 the differences in dissolved oxygen concentrations during backpumping and no backpumping were reduced. During backpumping the mean and minimum values increased to 6.9 and 4.5 mg/l, respectively, as compared to a non-backpumping mean and minimum values of 8.6 and 7.6 mg/l, respectively. At the north end of South Bay (6.49 km from S-2) the mean dissolved oxygen concentrations during backpumping and no backpumping were virtually equal at around 8.2 mg/l. The minimum dissolved oxygen concentration at the north end of South Bay (Station 26) was about 2 mg/l less during backpumping than during no backpumping, although the maximum concentration during backpumping was 1.3 mg/l greater. The most northward station (limnetic Station 15) displayed a trend similar to Station 26. The mean dissolved oxygen concentrations during backpumping and no backpumping were the same at around 8.0 mg/l but the maximum and minimum values during backpumping encompassed the range of values during no backpumping.

Specific conductance did not show the same degrees of contrast between backpumping and no backpumping as did nitrogen and dissolved oxygen. This was probably because Lake Okeechobee has a naturally high specific conductance around 600 μmhos/cm (Davis and Marshall 1975). In general specific conductance values measured during backpumping exceeded the values measured during no back-pumping for all transect stations through South Bay (Figure IV-23). Differences in ranges were greatest near S-2 and diminished further north. At Station 15 in the limnetic zone the mean specific conductances were virtually equal during the two periods although the backpumping range was slightly greater.

Turbidity has been shown to be low in backpumped water and not to be elev-ated in the Rim Canal as a result of backpumping. Similarly, turbidity values were low along the South Bay transect near S-2 (Figure IV-24). The amount of turbidity north of Station 2 becomes more a function of wind stress rather than

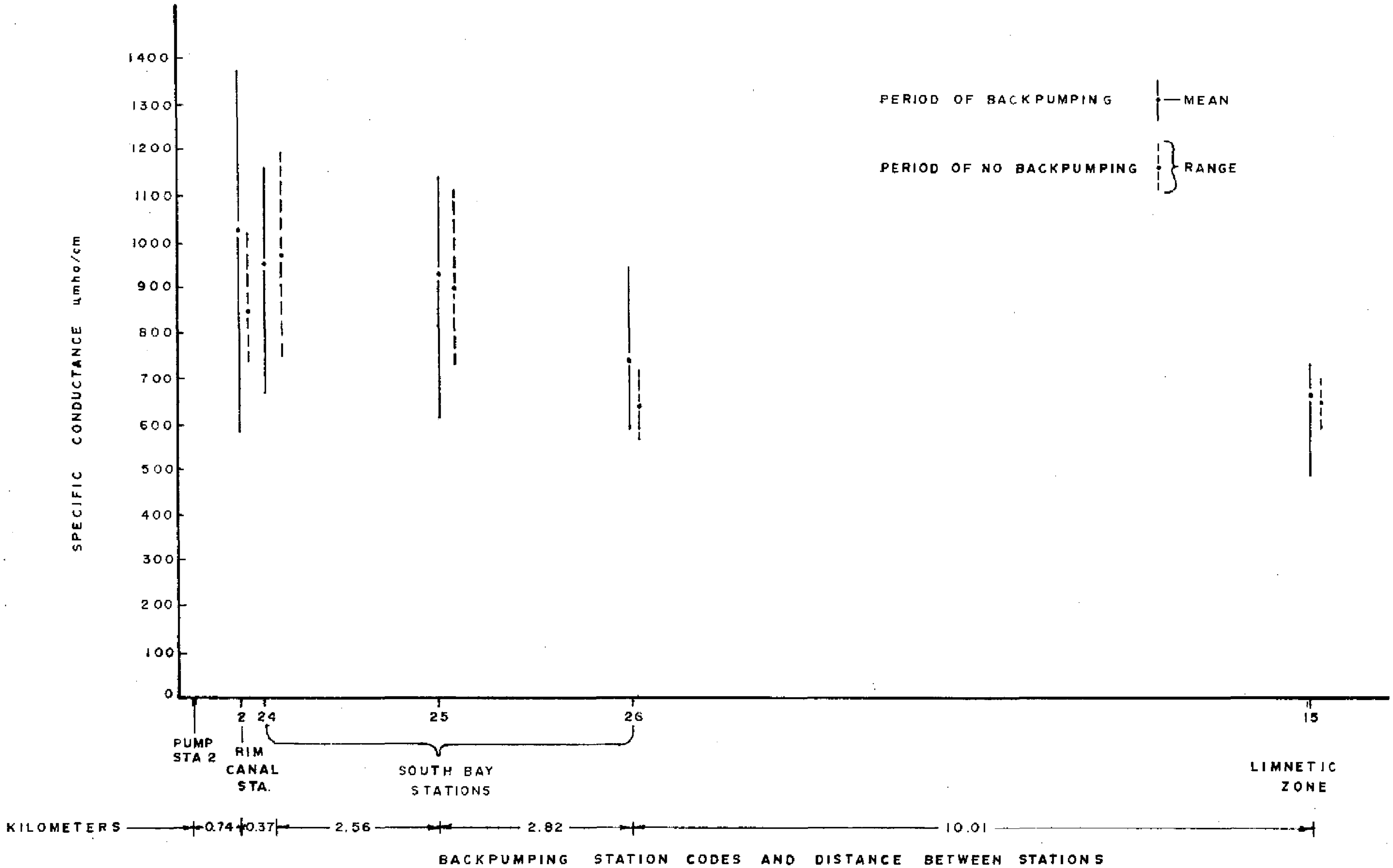


Figure IV-23 SPECIFIC CONDUCTANCE vs DISTANCE FROM PUMP STATION TWO DURING SAMPLING PERIODS FROM APRIL 1976 THROUGH AUGUST 1977

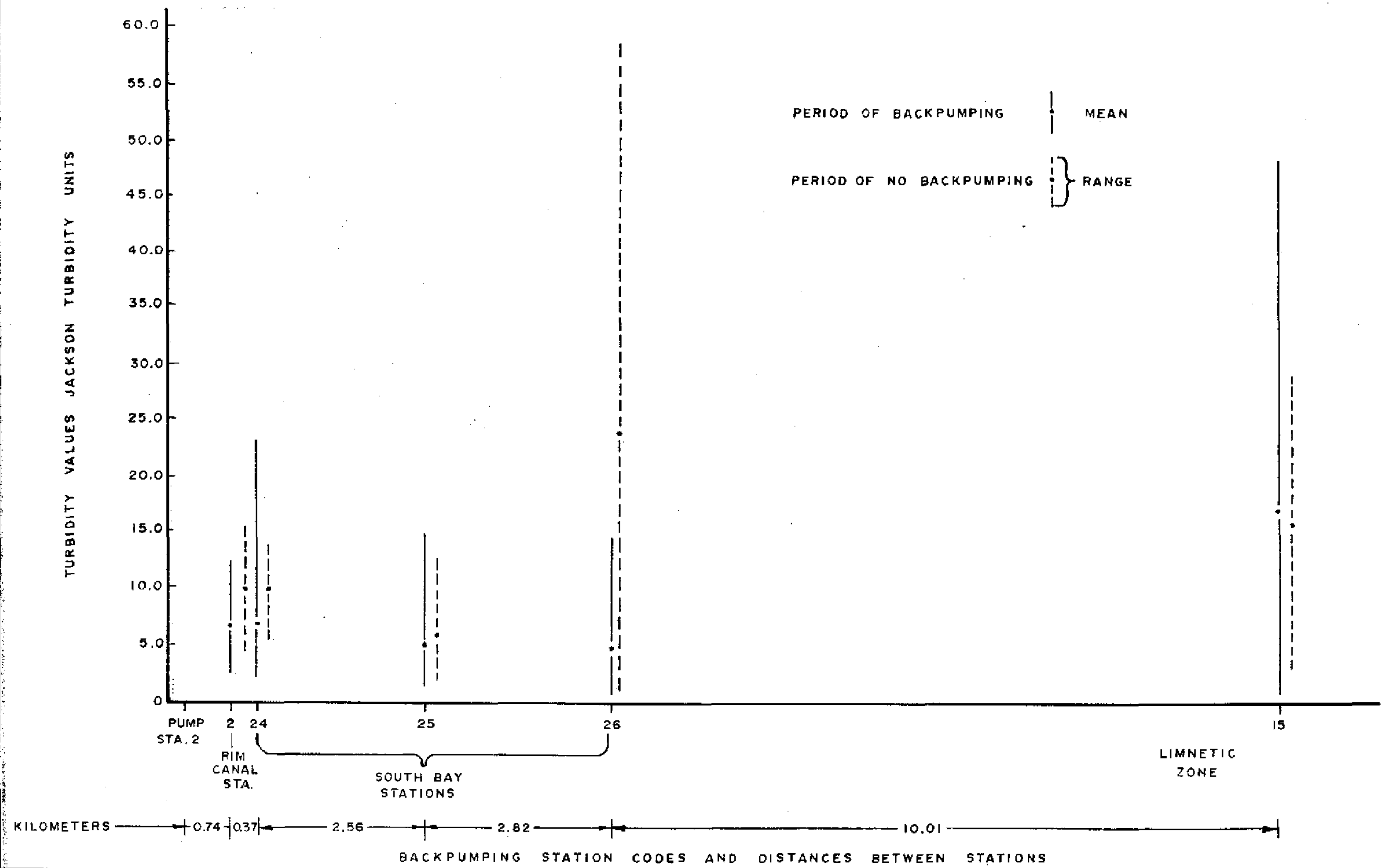


Figure IV-24 TURBIDITY VALUES vs DISTANCE FROM PUMP STATION TWO DURING SAMPLING PERIODS FROM APRIL 1976 THROUGH AUGUST 1977 as supported by the lack of a distinct turbidity trend similar to the ones described for nitrogen, phosphorus, dissolved oxygen and specific conductance.

In summary, the zone of influence of backpumping, as delineated by elevated total nitrogen and specific conductance levels and depressed dissolved oxygen concentrations, appears not to extend beyond the South Bay littoral area (6.5 km or 4 miles) to the north (Figures IV-9 and IV-10), past Moore Haven to the west, and at least to Pahokee to the east.

Brezonik and Federico (1975) reported on a short term (2 day) study of the effect of backpumping on Lake Okeechobee. Their results concerning the areal extent of backpumping indicated that the effects of backpumping in terms of elevated water quality parameters can be noticed throughout the south end of Lake Okeechobee. They reported that elevated water quality parameters improved with distance from the pump stations and approached mid-lake background levels about 10 km (6.2 miles) north of S-2. The results of the study presented in this report cover a much larger time span (17 months) and more clearly documented and delineated the effects of backpumping on Lake Okeechobee. The basic conclusions of the two studies concerning the areal extent of backpumping are not in conflict with the exception of the northward extent of the effects of backpumping. This report indicates that the northward influence of elevated water quality parameters extends to about 4 miles or 2 miles less than the limit reported by Brezonik and Federico.

TABLE IV-9. WATER QUALITY CHARACTERISTICS NORTH OF THE RIM CANAL DURING PERIODS OF BACKPUMPING - APRIL 1976 THROUGH AUGUST 1977

	Total N mg/l as N			Inorganic N mg/l as N			Organic N mg/l as N			Total P mg/l as P			Ortho P mg/l as P			Dissolved Oxygen mg/l			Specific Conductivity µmhos/cm			Turbidity JTU		
Station*	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean
BPS-10	1.31	2.19	1.65	.04	.58	.17	1.21	1.80	1.48	.028	.156	.080	.002	.113	.045	2.3	6.9	4.8	130	790	461	1.2	1.6	1.4
BPS-11	1.24	2.21	1.65	.02	.32	.11	1.22	2.19	1.54	.022	.195	.074	.002	.127	.022	.6	8.2	4.5	160	815	507	1.3	2.7	1.8
BPS-13	1.10	2.20	1.73	.02	.20	.07	1.03	2.16	1.67	.007	.032	.016	.002	.009	.004	5.6	9.4	7.6	595	842	709	1.4	1.8	1.6
BPS-14	1.35	2.54	1.79	.01	.11	.05	1.33	2.46	1.74	.001	.033	.016	.002	.004	.002	7.5	10.2	8.7	622	955	732	1.3	27.0	8.7
BPS-15	1.19	1.82	1.51	.05	.36	.21	1.13	1.50	1.30	.024	.120	.062	.002	.039	.024	5.3	11.4	7.9	505	740	668	8.2	49.0	22.5
BPS-16	1.13	2.19	1.56	.07	.88	.28	1.06	1.43	1.29	.021	.104	.048	.002	.053	.025	6.6	10.2	8.1	505	730	666	1.6	27.0	9.7
BPS-17	1.27	2.46	1.74	.01	.15	.05	1.22	2.44	1.68	.002	.031	.014	.002	.005	.003	6.7	11.0	8.8	550	875	692	.5	11.0	3.5
BPS-18	1.59	7.01	2.78	.02	3.35	.55	1.57	3.66	2.23	.005	.051	.027	.002	.034	.008	4.2	10.4	7.0	630	1130	847	1.2	12.0	3.9
BPS-19	1.36	2.32	1.75	.01	.12	.07	1.30	2.21	1.69	.003	.028	.014	.002	.015	.005	6.4	10.6	8.2	615	898	750	1.1	14.0	4.4
BPS-20	1.02	7.99	3.06	.04	3.91	.77	.93	4.08	2.29	.020	.120	.046	.002	.056	.017	2.4	7.7	4.2	660	1140	872	1.9	4.5	3.0
BPS-22	1.22	1.95	1.56	.01	.23	.08	1.16	1.94	1.48	.011	.044	.023	.002	.011	.004	7.0	10.4	8.2	450	775	668	1.4	13.0	4.4
BPS-23	1.70	8.82	3.78	.07	4.41	1.32	1.44	4.41	2.46	.019	.136	.068	.002	.095	.036	2.5	8.6	5.1	670	1400	1019	1.9	11.0	4.4
BPS-24	1.54	9.53	4.60	.20	5.15	1.83	1.24	4.38	2.77	.031	.147	.079	.008	.079	.039	1.6	9.1	4.3	665	1155	966	1.9	24.0	6.8
BPS-25	1.56	8.56	3.45	.01	4.38	.91	1.55	4.18	2.55	.025	.092	.039	.002	.081	.021	4.4	9.4	6.9	610	1145	934	.9	15.0	4.7
BPS-26	1.31	2.13	1.70	.01	.27	.10	1.29	1.94	1.60	.010	.051	.024	.002	.015	.004	5.6	10.4	8.2	585	947	744	.9	15.0	4.5
BPS-27	1.20	1.89	1.52	.02	.38	.15	.98	1.63	1.37	.017	.049	.029	.002	.030	.011	6.0	9.8	8.0	600	1080	721	.9	13.0	4.7
BPS-28	1.17	2.08	1.62	.01	.45	.17	1.07	1.97	1.45	.028	.057	.043	.002	.027	.014	5.5	9.8	7.7	600	1090	715	1.8	18.0	6.2

* See Figure IV-1 for station locations

TABLE IV-10. WATER QUALITY CHARACTERISTICS NORTH OF THE RIM CANAL DURING PERIODS OF NO BACKPUMPING - APRIL 1976 THROUGH AUGUST 1977

Station *	Total N mg/l as N			Inorganic N mg/l as N			Organic N mg/l as N			Total P mg/l as P			Ortho P mg/l as P			Dissolved Oxygen mg/l			Specific Conductivity µmhos/cm			Turbidity JTU		
	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean
BPS-10	1.73	3.17	2.27	.01	.21	.11	1.61	2.96	2.15	.027	.089	.059	.004	.047	.031	3.7	9.6	6.9	415	790	637	1.6	2.4	2.0
BPS-11	1.56	2.42	2.05	.08	.26	.20	1.30	2.35	1.85	.033	.062	.046	.007	.044	.025	1.6	5.7	3.9	390	810	655	.8	1.2	1.0
BPS-13	1.00	2.37	1.69	.01	.42	.15	.98	1.95	1.54	.014	.093	.041	.002	.093	.033	4.2	8.9	7.2	580	815	693	1.3	10.0	5.7
BPS-14	1.41	2.44	1.84	.05	.33	.12	1.36	2.11	1.72	.016	.132	.049	.004	.011	.007	8.3	9.4	8.7	665	785	774	2.8	21.0	11.9
BPS-15	1.44	2.53	2.06	.16	.89	.43	1.27	2.05	1.64	.055	.144	.100	.035	.045	.041	8.3	9.2	8.8	590	655	634	13.0	29.0	22.3
BPS-16	2.01	2.62	2.32	.04	.54	.29	1.97	2.08	2.03	.019	.120	.070	.002	.038	.020	8.9	9.1	9.0	615	665	640	12.0	20.0	16.0
BPS-17	.90	2.27	1.81	.01	.43	.18	.89	2.16	1.63	.014	.075	.038	.002	.021	.010	8.7	9.2	8.9	660	815	718	.9	27.0	14.6
BPS-18	2.49	2.80	2.65	.23	.29	.26	2.26	2.51	2.39	.017	.096	.057	.002	.009	.006	8.8	9.7	9.3	700	815	758	15.0	18.0	16.5
BPS-19	2.05	2.06	2.06	.11	.31	.21	1.74	1.95	1.85	.026	.093	.060	.003	.006	.005	8.1	9.4	8.8	685	740	713	14.0	33.0	23.5
BPS-20	1.75	2.44	2.10	.09	.13	.11	1.62	2.35	1.99	.015	.055	.035	.002	.004	.003	4.3	5.8	5.1	740	765	753	3.1	8.5	5.8
BPS-22	1.87	2.89	2.38	.23	.56	.40	1.64	2.33	1.99	.060	.155	.108	.029	.037	.033	8.6	9.4	9.0	670	680	675	26.0	29.0	27.5
BPS-23	1.77	2.66	2.11	.04	.17	.11	1.60	2.54	2.00	.020	.110	.052	.005	.014	.010	8.8	9.3	9.1	725	900	817	6.5	18.0	12.3
BPS-24	2.18	2.86	2.52	.03	.13	.08	2.83	2.05	2.44	.026	.194	.110	.004	.004	.004	9.1	9.9	9.5	750	1200	975	5.6	14.0	9.8
BPS-25	1.55	1.95	1.75	.01	.16	.07	1.54	1.92	1.73	.021	.087	.052	.002	.006	.004	7.6	9.4	8.7	720	1120	893	2.3	13.0	5.9
BPS-26	.86	2.44	1.39	.02	.20	.13	.69	2.24	1.26	.018	.183	.089	.002	.029	.016	7.6	9.1	8.3	575	725	647	.8	59.0	23.9
BPS-27	1.62	2.63	2.07	.02	.51	.24	1.60	2.12	1.83	.027	.205	.097	.008	.037	.026	7.8	8.8	8.4	635	730	682	27.0	36.0	31.5
BPS-28	.95	2.23	1.60	.04	.38	.19	.91	1.85	1.42	.029	.085	.060	.002	.032	.019	7.6	8.4	8.1	680	870	760	3.4	23.0	10.7

* See Figure IV-1 for station locations

PART V

EVALUATION OF THE IMPACT OF BACKPUMPING ON LAKE OKEECHOBEE

The impact of backpumping the Everglades Agricultural Area (EAA) drainage canals on Lake Okeechobee was evaluated from two perspectives: (1) in terms of Florida water quality standards (Florida Administrative Code Chapter 17-3) as they apply to receiving waters and (2) in the framework of nutrient loading rates as they relate to trophic state.

Water Quality Standards

Florida Administrative Code (FAC) Chapter 17-3 water quality standards were adopted in 1972 with the intent of maintaining or improving the quality of water within the State of Florida. There are two major groups of water quality parameters covered in Chapter 17-3. The first group of parameters - fluorides, chlorides, turbidity, dissolved oxygen, BOD, dissolved solids, specific conductance, radioactive substances, cyanide, copper, zinc, chromium, phenolic compounds, lead, iron, arsenic, oils and greases, pH, detergents, mercury, and temperature - have numeric standards associated with them. These numeric standards are criteria for pollution when they are exceeded. The other major group of constituents covered in Chapter 17-3 are those for which numerical threshold values have not been established. These interpretative criteria cover any substance considered by the regulatory agency to be deleterious and/or toxic.

Chapter 17-3 receiving water standards are applied only after a reasonable opportunity for mixing with the receiving waters has been afforded. The reasonableness of the opportunity for mixing is stated to be dependent upon the physical characteristics of the receiving waters. There are no definitive guidelines presented in Chapter 17-3 covering the determination of a mixing zone. FAC Chapter 17-3 recognizes that certain waters, due to natural causes, may not fall within prescribed limitations and as such may be granted exceptions to the standards. This recognition, in combination with the fact that Chapter 17-3 is based upon receiving water standards, necessitate evaluating the "natural" or background water quality levels in Lake Okeechobee before applying the standards.

Presented in Table V-1 are the mean, maximum, and minimum values for five selected Chapter 17-3 water quality parameters measured at 8 limnetic stations in Lake Okeechobee (Figure V-1) (SFWMD unpublished). This table covers the period April 1976 through August 1977 with the stations being sampled on a monthly frequency. High conductivity levels are prevelant throughout the Lake ranging from 131 to 798 μmhos/cm with a lakewide average of 625 μmhos/cm. Dissolved oxygen levels were consistently high in the Lake ranging from 6.0 to 14.5 mg/l. The pH at stations 1 through 4 fluctuated about one unit between 7.8 and 8.8. At stations 5 through 8 the pH fluctuated by more than 2 units between a range of 6.4 and 9.2. The mean iron concentration in the Lake ranged between 0.38 and 0.76 mg/l for all stations except station 2. Station 2 had an average iron concentration of 0.02 mg/l. The overall average iron concentration for the Lake was 0.51 mg/l. Chloride levels in Lake Okeechobee were moderate, ranging from an average of 87.2 at station 1 to 97.2 at station 3. This data is assumed to adequately represent the background levels and natural fluctuations in the receiving water of some of the important Chapter 17-3 water quality parameters measured in Lake Okeechobee. Although other parameters have numerical standards there was a lack of sufficient data for their proper evaluation.

The Chapter 17-3 standard for dissolved oxygen dictates that the concentration shall never be less than 4.0 mg/l. Distribution maps depicting the number of

TABLE V-1. SELECTED FAC-CHAPTER 17-3 WATER QUALITY PARAMETERS FOR LAKE OKEECHOBEE LIMNETIC STATIONS

Limnetic	Conductivity			Dissolved Oxygen			pH			Iron			Chlorides		
Stations	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean
1	135	763	616	6.2	10.8	8.3	7.90	8.75	8.32	0.11	0.83	0.38	37.2	107.8	87.2
2	136	780	619	6.4	11.9	8.4	7.80	8.79	8.24	0.01	0.02	0.02	66.6	102.6	94.8
3	132	735	600	6.3	9.9	8.3	7.90	8.65	8.24	0.15	1.79	0.76	90.3	106.4	97.2
4	131	744	631	6.4	14.5	8.5	7.90	8.80	8.26	0.23	1.97	0.75	27.5	113.4	93.9
5	136	750	642	7.2	11.6	8.8	6.50	9.15	8.33	0.07	1.09	0.43	67.1	107.5	91.0
6	140	790	653	6.3	11.8	8.0	6.40	9.20	8.06	0.12	1.02	0.53	82.8	101.4	94.3
7	137	798	601	6.0	12.0	8.4	6.40	8.80	7.94	0.06	0.59	0.44	83.6	102.1	94.4
8	138	790	637	6.6	11.2	8.3	6.40	8.80	8.24	0.09	1.78	0.73	79.7	102.8	96.6
Avg.			624.9			8.38						0.51			93.7

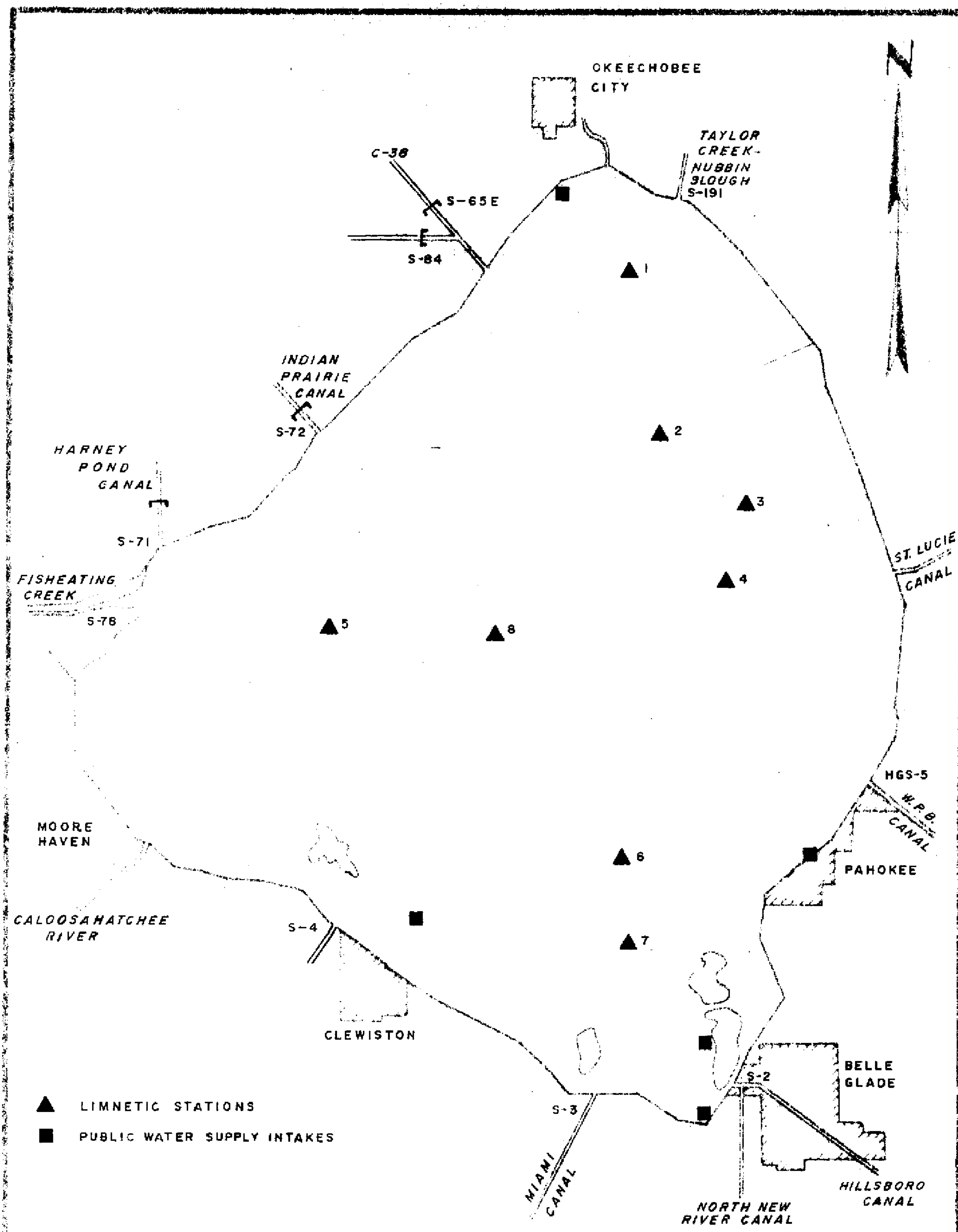


Figure V-1 LAKE OKEECHOBEE WATER CHEMISTRY SAMPLING STATIONS AND PUBLIC WATER SUPPLY INTAKES dissolved oxygen measurements taken at each station (includes surface and bottom measurements) and the number of values less than 4.0 mg/l are presented in Figures V-2 to V-5. Figure V-2 of the South Bay area, which covers periods of backpumping, shows that dissolved oxygen values of less than 4.0 mg/l occurred frequently (15 to 75 percent of the measurements) in the Rim Canal or at stations located within 100 meters of breaks in the Rim Canal. No dissolved oxygen values of less than 4.0 mg/l were measured at stations located farther lakeward than 100 meters from the Rim Canal. A similar trend was depicted on a lakeward transect graph (Figure IV-1) presented earlier in Part IV. Conversely, during periods of no backpumping only one dissolved oxygen value less than 4.0 mg/l was measured in the South Bay area of the Rim Canal (Figure V-4). Before the FAC standard can be strictly applied, however, a mixing zone needs to be delineated. In the context of treating the entire Lake as the receiving body it appears that a reasonable opportunity for mixing has been afforded when the waters in the Rim Canal are allowed to mix with the limnetic waters of the Lake. Once this mixing zone has been delineated, there appears to be no violation of the FAC Chapter 17-3 dissolved oxygen standard.

Figures V-3 and V-5 cover the west end of the Lake south of and including Fisheating Bay. Although this area is probably not influenced by backpumping, numerous dissolved oxygen violations occurred throughout the year irregardless of whether or not the backpumping was occurring. This indicates that other factors (i.e. configuration of the Rim Canal, groundwater seepage, inflow from Fisheating Creek, or inflow from Nicodemus Slough) may contribute to depressed oxygen values in other areas of the Rim Canal.

Lake Okeechobee has a mean conductivity of 625 μmhos/cm, ranging from an average of 600 μmhos/cm at station 3 to an average of 653 μmhos/cm at station 6

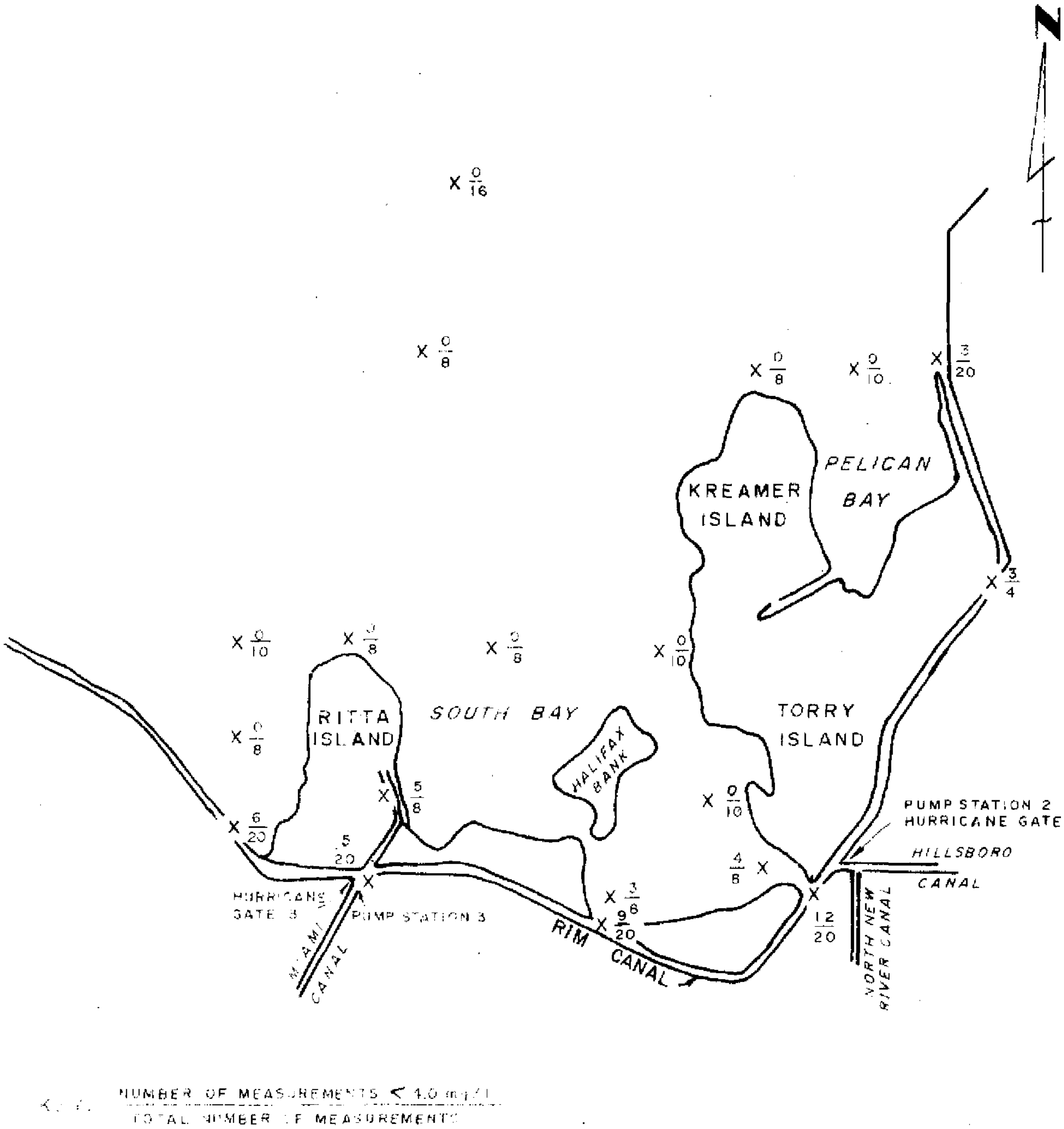


Figure V-2 FREQUENCY OF DISSOLVED OXYGEN VALUES LESS THAN 4.0 MG/L IN SOUTHEASTERN LAKE OKEECHOBEE DURING PERIODS OF BACKPUMPING

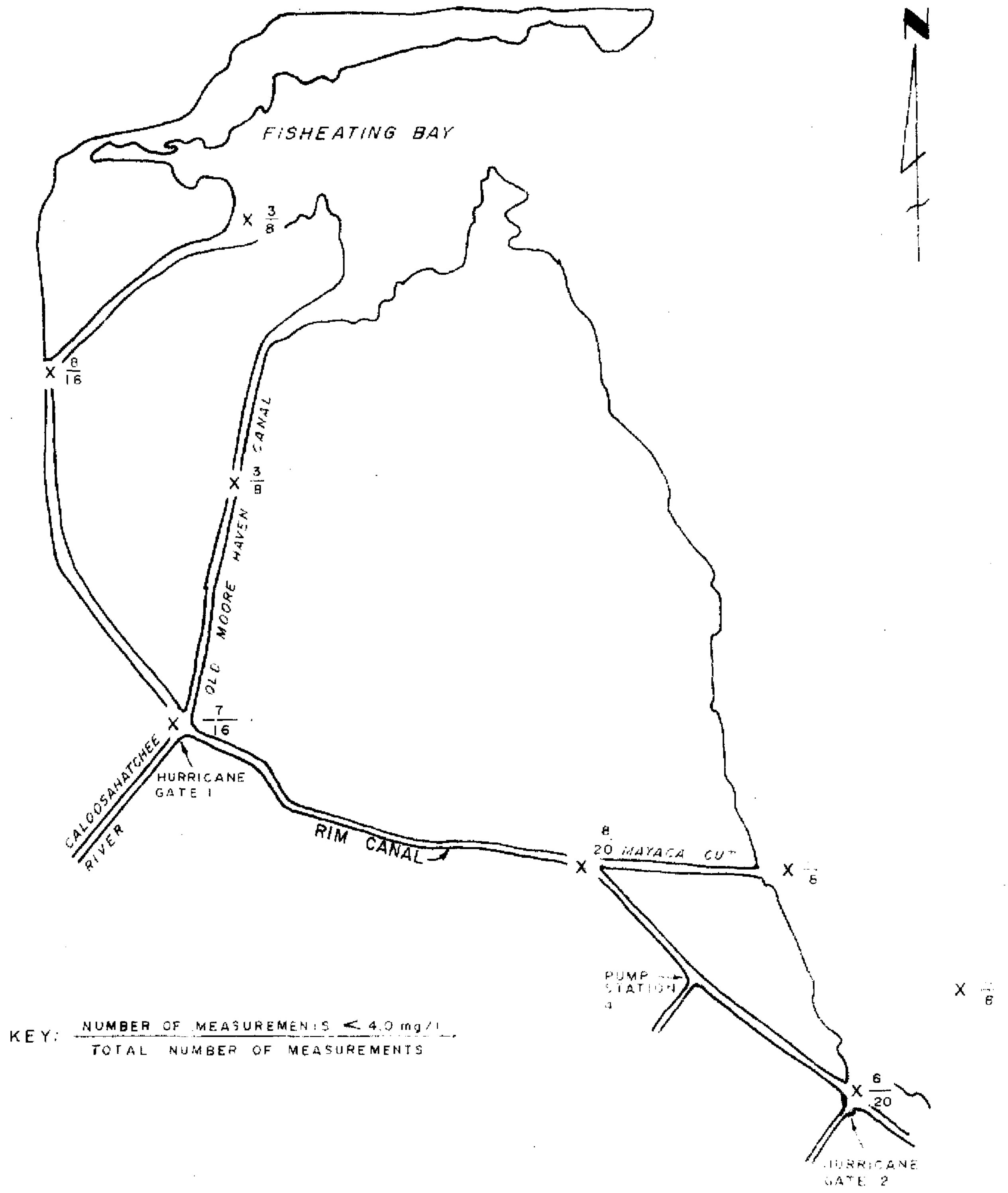


Figure V-3 FREQUENCY OF DISSOLVED OXYGEN VALUES LESS THAN 4.0 MG/L IN WESTERN LAKE OKEECHOBEE DURING PERIODS OF BACKPUMPING

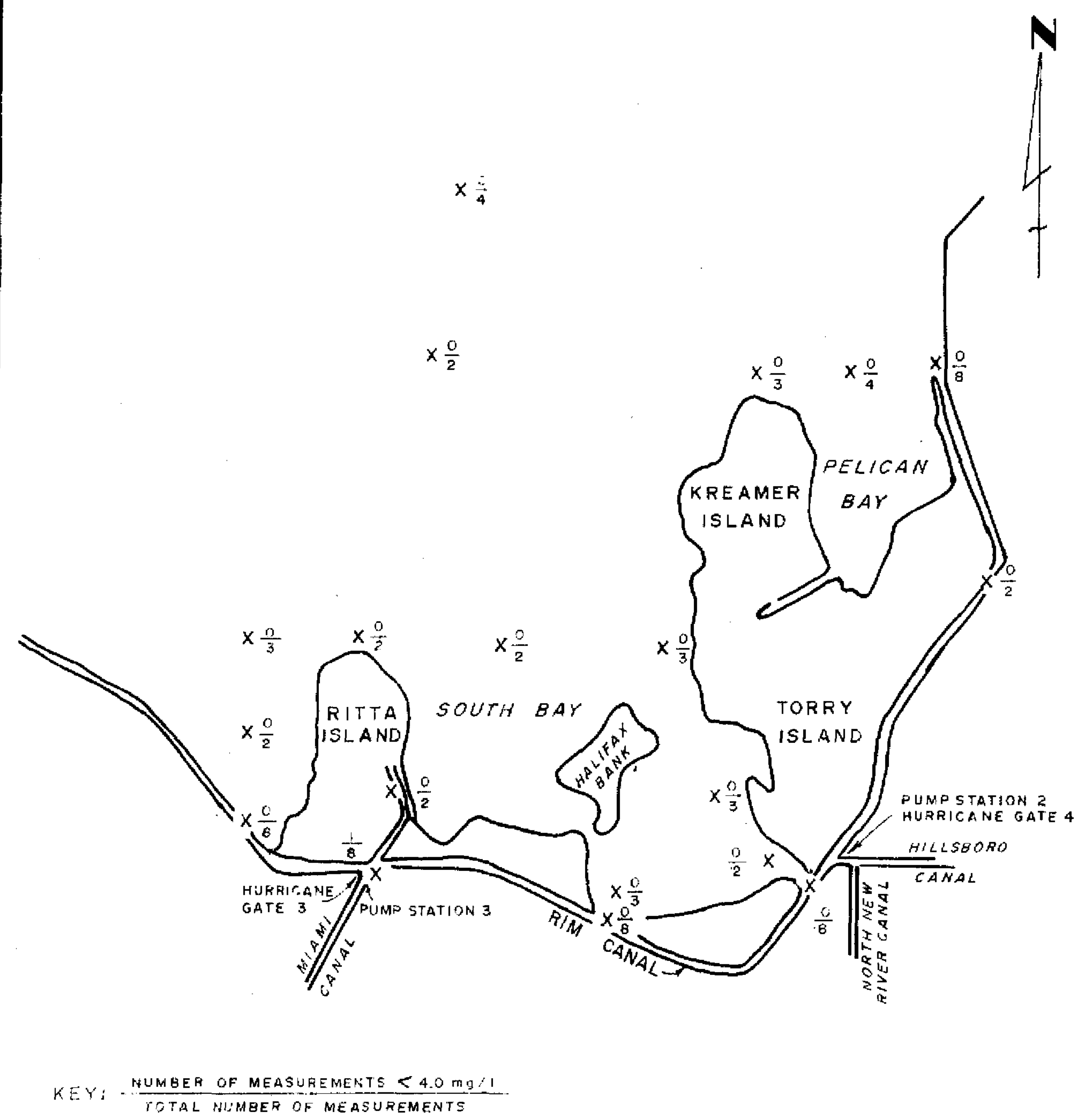


Figure V-4 FREQUENCY OF DISSOLVED OXYGEN VALUES LESS THAN 4.0 MG/L IN SOUTHEASTERN LAKE OKEECHOBEE DURING PERIODS OF NO BACKPUMPING

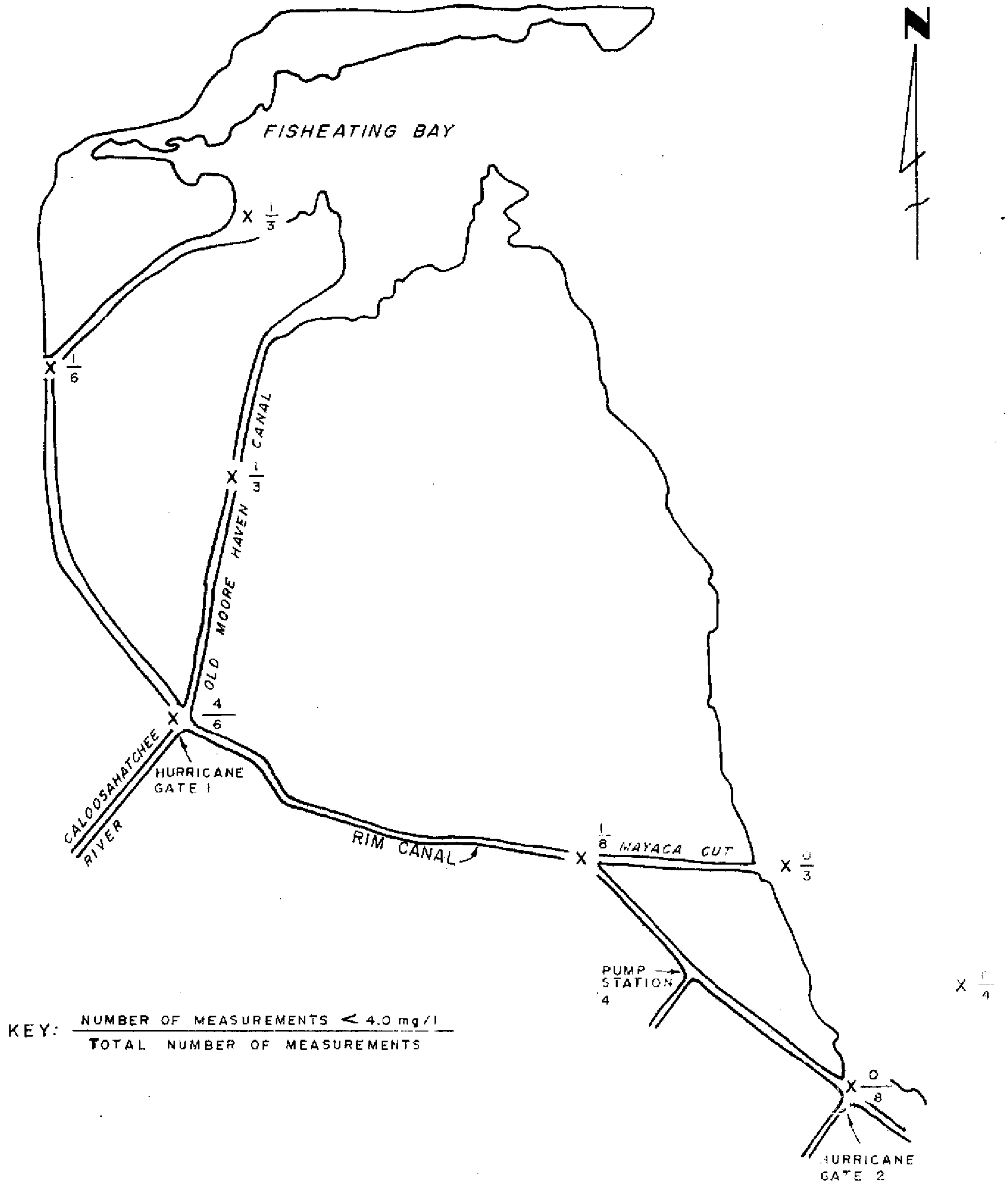


Figure V-5 FREQUENCY OF DISSOLVED OXYGEN VALUES LESS THAN 4.0 MG/L IN WESTERN LAKE OKEECHOBEE DURING PERIODS OF NO BACKPUMPING

(Table V-1). Since it appears that within the Lake's natural conductivity fluctuations the 500 µmhos/cm standard is usually exceeded, application of the conductivity standard in the assessment of the impact of backpumping on the receiving waters of Lake Okeechobee is inappropriate.

The background iron concentration measured at the eight limnetic stations ranged from 0.01 mg/l to 1.97 mg/l, with a lake-wide average of 0.5 mg/l. Again since it appears that the natural background iron concentration in the Lake frequently exceeds the 0.30 mg/l standard, application of the standard is also inappropriate.

The Chapter 17-3 standard for pH states that the pH of the receiving waters shall not be caused to vary more than one unit above or below the normal pH range of the waters and that the maximum range be between 6.0 and 8.5. Due to the high alkalinity of Lake Okeechobee (134 mg/l as $CaCO_3$) the upper bound of the Lake's normal background pH range of 6.40 to 9.20 (Table V-1) "naturally" exceeds the maximum allowable pH standard of 8.5. Therefore, strict application of the maximum pH range standard is inappropriate. In order for this standard to be applicable to the Lake the upper bound of the standard needs to be increased from 8.5 to 9.2, thereby changing the allowable pH range to 6.0 - 9.2. Values of pH below this range were measured 11 times (out of a total of 94 measurements) at BPS stations 7 through 11 (Figure IV-1). These stations do not appear to be influenced by backpumping (Part IV), instead the lower pH values are probably due to inflow from Fisheating Creek which has a pH range of 5.67 to 8.65. No pH values above 9.2 were measured at any of the backpumping stations. If application of the part of the pH standard that states the pH of the receiving water shall not be caused to vary more than one unit above or below the normal pH range of waters is applied, then values below 5.4 or above 10.2 would be needed to constitute a violation of the standard. There were no pH values less than 5.4 or greater than 10.2 measured in the backpumping study area of the Lake. Therefore, it appears that there were no violations of the pH standard in the south end of Lake Okeechobee that are attributable to backpumping.

FAC Chapter 17-3 indicates that chlorides shall not exceed 250 mg/l. In only one instance, on 9/28/76 at station 1 (Figure V-1), did the chloride concentration (310.6 mg/l) in the south end of the Lake exceed the FAC standard. Since this is the only station which exceeded the standard and since this area may also be influenced by wastewater discharge from the City of Pahokee, it appears that backpumping does not cause chloride concentrations to exceed the 250 mg/l standard.

Nutrient Loading Rates

Tributary Loadings to Lake Okeechobee

Presented in Table V-2 are the average annual loadings to Lake Okeechobee based on a four year period of record (1973-1977). Annual rainfall on the Lake during this period ranged from 34.5 inches (May 1973 - May 1974) to 43.7 inches (May 1974 - May 1975) with a four year average of 39.3 inches. Joyner (1974) reported a 40 year median rainfall of 45.6 inches for Lake Okeechobee, suggesting that the four year record of loadings to the Lake represent a slightly dry period. Loadings to the Lake during an "average" or wet year would, therefore, be expected to be larger. Loadings from all the major tributaries except the Everglades Agricultural Area (EAA) were calculated from daily hydrology data and water chemistry data collected at a biweekly frequency from 1973 to 1977 (SFWMD unpublished). Loadings from the EAA included a four year period of record for S-2 and S-3 (1973-1977) and a one year period of record for S-4 and the private backpumping drainage districts. Loading data from the private drainage districts was supplied by BC&E/CH2M Hill (Shannon 1977). Based on this data a yearly average of approximately 3390 X 10^3 acre-feet of water, 597 tons of phosphorus, and 7907 tons of nitrogen were discharged into Lake Okeechobee from all measured sources.

TABLE V-2 MEAN ANNUAL LOADINGS TO LAKE OKEECHOBEE FROM MAY 1973 TO MAY 1977

	Drainage Area		Flow			Phosphorus			Nitrogen		
Source	sq. mi.	%	10^3 acre-ft	%	Areal 1/ Export acre-ft mi^2-yr	tons	%	Areal Export lbs/ acre-yr	tons	%	Areal Export lbs/ acre-yr
Rainfall			1347.2	40%		98	16%		1725	22%	
Kissimmee River Basin	2335	63%	1202.4	36%	515	129	22%	0.173	2103	27%	3.15
Taylor Creek/ Nubbin Slough	184	5%	140.7	4%	765	160	27%	2.71	387	5%	7.34
EAA 2/	427	12%	378.4	11%	869	88	15%	0.644	2798	35%	20.5
Harney Pond Canal	286	8%	125.3	4%	535	44	7%	0.58	307	4%	4.51
Indian Prairie Canal			27.7	1%		9	2%		106	1%	
Fisheating Creek	461	12%	168.2	5%	365	69	12%	0.468	481	6%	3.65
Total	3693		3389.9			597			7907		

1/ Areal export from each drainage basin

2/ Includes S-2, S-3, S-4, and seven private drainage districts. Loadings from S-4 and the private drainage districts are for 1 year only.

Backpumping from the EAA resulted in the highest areal export rate of water (869 acre-ft/sq mi-yr) and accounted for 12 percent of the total lake inflow. The areal export rate standardizes the discharge account to the size of the drainage basin. This allows for a common basis by which to compare loading rate intensities. Backpumping also produced the highest areal export rate for nitrogen (20.5 lbs/acre-yr) which accounted for 35 percent of the total nitrogen load to Lake Okeechobee. Phosphorus was exported from the EAA at a rate of 0.644 lbs/acre-yer which was the second highest rate among the major inflows. This export rate accounted for 15 percent of the total phosphorus load to the lake.

Loadings from the EAA were represented by exports from S-2, S-3, S-4 and seven private drainage districts (Table V-3). Backpumping through the S-2 structure, which drains 39 percent of the EAA, accounted for 60 percent of the flow, 61 percent of the nitrogen load, and 48 percent of the phosphorus load attributable to the EAA. The S-3 structure drains the second largest sub-basin in the EAA (100 sq mi-yr or 23 percent) and contributed between 10 and 17 percent of the flow, nitrogen, and phosphorus load. The S-4 structure drains 21 percent of the EAA (91 sq mi) and accounted for between 3 and 8 percent of the flow, nitrogen, and phosphorus loads. The large contribution attributable to backpumping through the S-2 structure was the result of the high areal export rates in that sub-basin. The S-2 basin had higher areal export rates for water (1355 acre-feet/sq mi-yr), phosphorus (0.791 lbs/acre-yr), and nitrogen (32 lbs/acre-yr) than did the S-3 and S-4 sub-drainage basins. However several of the private drainage districts had higher areal export rates than did the S-2 basin. Ritta Island had the highest areal export rate in the EAA for water and nitrogen (3504 acre-feet/sq mi-yr and 82.7 lbs N/acre-yr, respectively) and the second highest rate for phosphorus (3.88 lbs P/acre-yr). Pahokee Farms had a higher phosphorus areal export

TABLE V-3. MEAN ANNUAL LOADINGS FROM EVERGLADES AGRICULTURAL AREA (EAA)

Source	Sub-drainage Area (sq. mi.)	Backpumping Flows: Volume (acre-ft)	Backpumping Flows: %	Backpumping Flows: Areal Export (A-F/mi^2-yr)	Total Nitrogen: Loadings (tons N)	Total Nitrogen: %	Total Nitrogen: Areal Export lbs./acre-yr	Total Phosphorus: Loadings tons P	Total Phosphorus: %	Total Phosphorus: Areal Export lbs./acre-yr
S-2 1/	166	225000	59.5%	1355	1719	61.4%	32.4	42	47.7%	0.791
S-3 1/	100	62600	16.5%	626	440	15.7%	13.8	9	10.2%	0.281
S-4 1/	91	23000	6.1%	253	80	2.9%	2.7	7	8.0%	0.240
Private Drainage Districts 2/										
Mayaca Groves	4.53(P) 3/	4181	1.1%	923	12.8	0.5%	8.8	1.74	2.0%	1.2
East Beach	10.22	5742	1.5%	562	67.71	2.4%	20.7	3.83	4.4%	1.17
Pahokee	4.22	4275	1.1%	1013	35.1	1.3%	26.0	2.17	2.5%	1.5
So.Fl. Cons.	15.27(P)	16769	4.4%	1098	141.62	5.1%	29.0	3.42	3.9%	0.70
Clewiston	4.69	5993	1.6%	1278	33.34	1.2%	22.2	6.03	6.8%	4.02
Ritta Island	0.78	2733	0.7%	3504	20.67	0.7%	82.7	0.97	1.1%	3.88
Industrial Canal	17.40	15057	4.0%	865	89.90	3.2%	16.1	8.19	9.3%	1.47
East Shore	12.7	13018	3.4%		158.10	5.7%	38.9	3.66	4.2%	0.90
Total	426.8	378368			2798			88		

1/ SFWMD unpublished

2/ Preliminary data from BC&E/CH2M HILL (Shannon 1977)

3/ Partial (P) indicates that only a portion of the indicated acreage is tributary to the noted receiving water.

rate than S-2 at 1.5 lbs P/acre-yr. The remaining private drainage districts had export rates that were higher than those calculated for S-3 and S-4 but lower than those for S-2. The exception to this was the phosphorus export rate for Clewiston (4.02 lbs P/acre-yr) which was the highest rate calculated in the EAA. In combination the private drainage districts supplied 17.8 percent of the water, 20.1 percent of the nitrogen, and 34.2 percent of the phosphorus that was attributable to the EAA while draining approximately 16 percent of the basin.

Rainfall was the largest source of water to the Lake, accounting for 1347.2 10^3 acre-feet/yr or 40 percent of the inflow. The nutrient input attributable to rainfall was substantially less than the hydrologic input, with rainfall supplying 16 percent of the phosphorus load and 22 percent of the nitrogen load.

The Kissimmee River was the second largest source of water to Lake Okeechobee, contributing 1202.4 X 10^3 acre-feet/yr or 36 percent of the surface inflow. Due to the storage capacity of the upper Kissimmee River chain of lakes the areal export of water from the Kissimmee River basin was the second lowest (515 acre-ft/sq mi-yr) of any of the major tributaries.

Compared to the quantity of water discharged, the River contributed proportionally less of the total phosphorus and nitrogen load (22 and 27 percent, respectively). Although the River represents the second largest source of nutrients to the Lake, the areal export of phosphorus (0.173 lbs/acre-yr) from the Kissimmee River basin was the lowest while the areal export of nitrogen was the second lowest (3.15 lbs/acre-yr) of any of the major lake tributaries.

The Taylor Creek/Nubbin Slough (S-191) basin, the smallest major tributary to Lake Okeechobee (184 sq mi) supplied 4 percent of the surface inflow. The rate of water runoff from this basin, however, was the second largest (765 acre-ft/sq mi-yr) of any of the major tributaries. This basin was also the single largest source of phosphorus (160 tons/yr or 27 percent of the total load). The areal export rate of 2.71 lbs. (phosphorus/acre-yr) was almost 5 times higher than any other major tributary. The Taylor Creek/Nubbin Slough basin accounted for a small percentage of the Lake's total nitrogen load (5 percent) although it had the second highest areal export rate for nitrogen (734 lbs N/acre-yr).

The combined Harney Pond-Indian Prairie basins supplied 5 percent of the flow, 9 percent of the phosphorus, and 5 percent of the nitrogen load entering Lake Okeechobee (Table V-2). The areal export rates of 535 acre-feet/sq mi-yr, 0.58 lbs P/acre-yr, and 4.51 lbs N/acre-yr were in the mid-range of the export rates for the major drainage basins to the Lake.

Fisheating Creek occupies approximately 12 percent of the Lake Okeechobee drainage basin while accounting for 5 percent of the surface inflow, 12 percent of the phosphorus load, and 6 percent of the nitrogen load. Fisheating Creek had the lowest areal export rate for water runoff (365 acre-feet/sq mi-yr), and the third highest for phosphorus and nitrogen (0.468 and 3.65 lbs/acre-yr, respectively).

Introduction Lake Eutrophication

The eutrophication of lakes has received a great deal of public exposure in recent years. Due to the complex nature of the process of eutrophication, many misconceptions have arisen as to what problems are associated with this phenomenon. Basically the problem of eutrophication can be divided into two parts: the process and the effect. The process of eutrophication is the nutrient enrichment of natural waters without reference to the specific enrichment mechanisms. The effect of eutrophication on lakes is more difficult to define since it involves the lake's current trophic state. Since there is no generally accepted quantitative measures of trophic state, the effect of nutrient enrichment cannot be quantitatively related to the process of eutrophication.

The trophic state of a lake is a hybrid concept involving a variety of biological and chemical conditions. Qualitative designations of trophic state have traditionally been assigned to lakes with certain biological and chemical characteristics. Oligotrophic is a term associated with lakes which usually have low nutrient concentrations; low chlorophyll *a* concentrations; low primary productivities; high transparencies; high algal, benthic, and fish species diversities, and low algal, benthic, and fish biomass. Eutrophic is a term associated with lakes which usually have high nutrient concentrations; high chlorophyll *a* concentrations; high primary productivities; increased algal bloom frequencies; high algal, benthic, and fish biomass; and low algal, benthic, and fish species diversity. A typical transition scale would be oligotrophic, mesotrophic, eutrophic, and hypereutrophic although many other finer divisions are commonly reported.

Which trophic state is preferred depends upon the intended use of the body of water. A lake used as a public water supply would preferably be in a oligotrophic state primarily for water treatment consideration. The clearer water would be asthetically pleasing and would not require expensive filtration, while the lower algal biomass and bloom frequency would lessen potential problems due to clogged filters. The lower frequency of algal blooms would also avoid unpleasant odors. If a lake was used primarily for recreational swimming, an oligotrophic state would also be preferred because of the high water transparency and the lack of nuisance algal blooms. However, if a lake were to be used primarily for fishing, a more eutrophic lake might be preferred. A mesotrophic-eutrophic lake usually supports a larger fish population (greater biomass) due to higher nutrient and productivity levels. As long as the sport fish remain the dominant species this would be a more desired trophic state. However, the species composition of the fish population could be altered in the transition to a eutrophic/hypereutrophic state. It is possible that fish undesirable for sport or food could dominate a more eutrophic lake and decrease its desirability as a fishing resource.

Nitrogen and phosphorus are usually considered the primary nutrients influencing the eutrophication of lakes. Under natural conditions these elements are derived from biological and geochemical processes. Although other minor nutrients are needed for plant growth, the occurrence of these minor nutrients are usually correlated with the relative abundance of nitrogen and phosphorus in surface waters. Nitrogen and phosphorus, therefore, are generally considered to be the primary elements limiting primary production of algae and aquatic plants in lakes. Algal assays have found both elements limiting primary productivity in different lakes, in the same lake at different times, and in different areas of the same lake at the same time (EPA National Eutrophication Survey, unpublished). Phosphorus, however, is usually considered to be the most common limiting nutrient in the lake systems (Schindler 1977). The rationale for this is that lakes have the long term ability to correct for nitrogen deficiencies. Biological mechanisms exist for the fixation of atmospheric nitrogen into ammonia which can be readily asssimilated . Similar pathways do not exist for phosphorus which has no gaseous atmospheric cycle. Therefore, over long periods of time phosphorus usually controls productivity in lakes. When phosphorus is the controlling element, reductions in the phosphorus input could reduce the lake's productivity thereby resulting in an improved trophic state. There are events which can take place that can alter the trend toward phosphorus limitation and cause nitrogen to be limiting. A sudden increase in the phosphorus input (as is common during cultural eutrophication) or sediment release of phosphorus without a proportional release of nitrogen, can result in a nitrogen limited system. Cultural eutrophication is the nutrient enrichment of a body of water as a result of human intervention in the drainage basin. Over a long enough time period a lake could compensate for this nitrogen deficiency and return to a phosphorus limited system. However, the time period required for this transition is unknown. During this nitrogen limited period reductions in the nitrogen input could cause a reduction in the lake's primary productivity and improve its trophic state.

Trophic State of Lake Okeechobee

The present trophic state of Lake Okeechobee has been discussed in several recent publications. Joyner (1974) evaluated data collected on the Lake from 1969 to 1972 and concluded it was in an early eutrophic condition. Davis and Marshall (1975) discussed Lake Okeechobee's trophic state based on data collected in 1973 and 1974 utilizing several lake classification schemes. In summary Davis and Marshall classified the Lake as eutrophic based upon primary productivity (Brezonik, et al. 1969) and ambient phosphorus concentrations (Sakamoto 1966, Vollenweider 1968); as mesotrophic based upon nutrient loading rates (Vollenweider 1968; Shannon and Brezonik 1972); and as oligotrophic based upon ambient nutrient concentrations (Sakamoto 1966, Vollenweider 1968). The Summary Report on the Special Project to Prevent the Eutrophication of Lake Okeechobee (Dept. of Administration 1976) described Lake Okeechobee as presently being in a nutrient enriched eutrophic condition. Based upon these studies Lake Okeechobee can be considered to be in a eutrophic state as a result of the process of eutrophication.

Assessment of the Impact of Nutrient Loadings on Lake Okeechobee

To date both phosphorus and nitrogen have been implicated as the primary limiting nutrient in Lake Okeechobee. Results of the EPA National Eutrophication Survey on Lake Okeechobee (EPA unpublished) indicated that the Lake was phosphorus and nitrogen limited based upon the mean inorganic nitrogen to ortho-phosphorus ratio.

The effect of the nitrogen and phosphorus loadings on Lake Okeechobee depends on a number of physical and chemical properties of the Lake. Table V-4 presents a list of the general physical and chemical factors controlling the effects of

TABLE V-4

PHYSICAL AND CHEMICAL FACTORS CONTROLLING THE EFFECTS OF NUTRIENT ENRICHMENT ON TROPHIC STATUS

Physical	Chemical
Mean depth	pH
Steepness of bottom contour	Balance of all nutrients needed for production
Shoreline irregularity	Suspended solids (as affecting transparency)
Percent littoral area	Nutrient concentrations
Mean depth/surface area ratio	Dissolved oxygen
Wind protection by surrounding terrain	
Temperature	
Insolation	
Circulation which affects sedimentation rates	

From Brezonik *et al*. 1969

nutrient enrichment of trophic state. Specifically in relation to Lake Okeechobee the mean depth, mean depth/surface area ratio, and circulation patterns may be unique and of major importance with regards to the effects of nutrient enrichment. Since the interaction between these factors and nutrient loadings as related to Lake Okeechobee are not fully understood, the determination of the specific effects of the current loadings on the Lake cannot be made from a classical cause-effect approach.

One method of assessing the impact of nutrient loadings to lakes is to take the basic approach of Vollenweider (1968) and focus upon the lake's inputs and outputs. The Vollenweider type approach predicts the eventual trophic state of the lake by comparing it to other lakes whose loadings and current trophic states are well documented. Vollenweider (1968) found that when the log of the areal total phosphorus or nitrogen loadings of temperate lakes were plotted versus the log of the mean depth, straight bands could arbitrarily be drawn which separated the lakes into three standard categories: oligotrophic, mesotrophic, and eutrophic. The lower band separating the oligotrophic and mesotrophic lakes was termed the "permissible loading level" since it represented the upper loading rates, as a function of mean depth, that could be permitted and still give the lake a high probability of maintaining an oligotrophic (low nutrient-low productivity) state. The upper band, which separates the mesotrophic and eutrophic lakes, was termed the "dangerous loading level" and represented the loading rate above which a lake has a high probability of proceeding to a eutrophic/hypereutrophic (high nutrient-rich productivity) state. Loading levels in between the permissible and dangerous rates may or may not cause problems depending on other factors. Vollenweider (1975) later revised his phosphorus loading vs mean depth relationship to account for the hydraulic residence time.

Shannon and Brezonik (1972) used a different approach in deriving permissible and dangerous loading rates for 55 Florida lakes. They employed regression techniques to develop predictive equations between nitrogen and phosphorus loading rates and trophic state as delineated by their Trophic State Index (TSI). Their results indicated that Florida lakes might be able to assimilate nutrients at somewhat greater rates without becoming eutrophic than was suggested by Vollenweider's critical values (Table V-5) which were derived for temperate lakes.

Permissible and dangerous loading levels do not incorporate any time element, i.e. a particular loading rate does not specify a particular rate of eutrophication. A loading rate above the dangerous level merely indicates that if this rate is maintained at some time in the future the lake will probably progress into a eutrophic state. The time the lake takes to reach this eutrophic state is unknown and is not predictable by the simple dangerous loading rates. Factors listed in Table V-6, in addition to the hydraulic and nutrient retention times, would effect the time span required before the lake progresses to a eutrophic state.

Dangerous and permissible loading rate criteria may be used as one tool for assessing the impact of nutrient loadings on the trophic state of Lake Okeechobee. Employing this approach requires a series of decisions to be made along a branching pathway of possible nutrient loading assessment methodologies (Figure V-6). The initial choice to be made is whether the attainment of dangerous loading rates or permissible loading rates will be part of the nutrient loading assessment technique. Evaluation of the current loadings against dangerous loading rate criteria would place the current loadings in perspective in relation to loading rates that would be needed to maintain the present eutrophic state of Lake Okeechobee. Evaluating the current loadings against permissible loading rate

TABLE V-5. SUMMARY OF PERMISSIBLE AND DANGEROUS LOADING RATES

	Permissible Loading 1/		Dangerous Loading 1/	
Reference	N	P	N	P
Shannon and Brezonik (1971)	2.0	0.28	3.4	0.49
Vollenweider (1968) 2/	1.0	.07	2.0	0.13
Vollenweider (1975) 3/	-	0.12	-	0.23

1/ Units $g/m^2/yr$

2/ For lake with mean depth of 5 m or less

3/ Corrected for hydraulic residence time

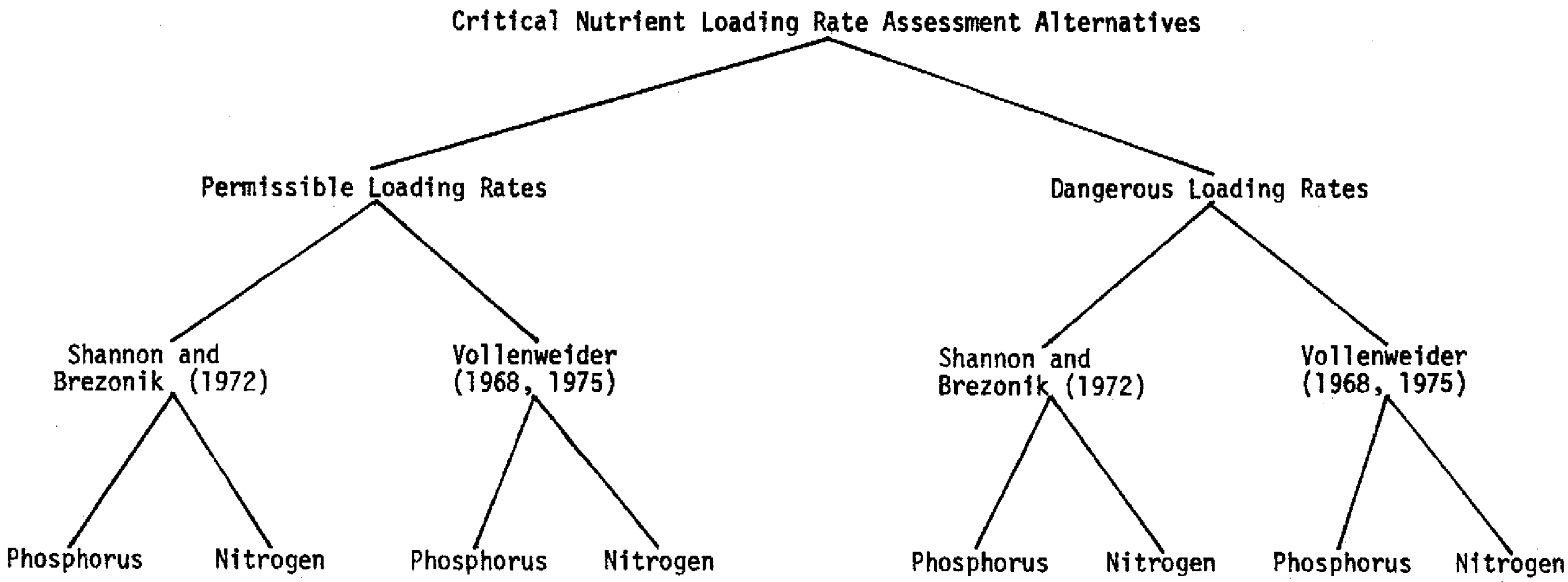
TABLE V-6

FACTORS AFFECTING NUTRIENT ENRICHMENT RATES (EUTROPHICATION) OF LAKES

Natural Factors	Human Factors
Geochemistry of the basin (Composition of underlying rock structures)	Domestic sewage Agricultural runoff Type of farming Ferilitzation practices and extent
Soil types Hydrology Size of drainage basin Short-circuiting Detention time in lake Groundwater composition	Mining operations Industrial wastes Urban runoff (Auto exhaust, lawn and garden fertilizing, leaves, etc.)
Climate Precipitation Thermal structure	Nutrient leaching from drained marshes and from garbage dumps

From Brezonik *et al.* 1969

FIGURE V-6. NUTRIENT LOADING ASSESSMENT ALTERNATIVES FOR LAKE OKEECHOBEE



criteria would provide the relationship between the current loadings and loading levels which would probably improve the trophic state of Lake Okeechobee. Further assessment of the impact of the nutrient loadings on Lake Okeechobee will, therefore, be placed in the reference frame of permissible loading rate criteria.

Different permissible loading rates are available depending on whether the approach of Shannon and Brezonik (1972) or Vollenweider (1968, 1975) is employed. An important advantage of using the permissible loading rates of Brezonik and Shannon are that their rates are derived from data obtained from lakes in Florida. The disadvantages of utilizing the permissible loading rates of Shannon and Brezonik are: (1) the loading data used in deriving the nutrient load to their 55 study lakes was not measured directly, instead it was estimated based upon areal photography to delineate land use patterns and the subsequent application of the appropriate literature nutrient runoff coefficients and (2) Lake Okeechobee was not one of the 55 lakes used in deriving the critical loading rates. Similarly there are advantages and disadvantages of employing Vollenweider's 1975 permissible loading rates with the advantages being: (1) the loading data used in his analysis were quantitatively measured; and (2) his approach is more established in the scientific literature. The disadvantages of employing Vollenweider's 1975 permissible loading rates are: (1) his loading rate criteria were based on temperate lakes which are limnologically different from sub-tropical Lake Okeechobee; and (2) Lake Okeechobee was also not part of the set of lakes used in his analysis.

Based on these advantages and disadvantages it appears that Shannon and Brezonik's permissible loading rates have the strongest significant advantages while Vollenweider's permissible loading rates have the most serious disadvantages when evaluated for Lake Okeechobee. Therefore, Shannon and Brezonik's permissible loading rate criteria should be the primary tool initially set in assessing the impact of nutrient loadings on the trophic state of Lake Okeechobee.

Presented in Table V-7 is a summary of the permissible and dangerous loading rates for Lake Okeechobee. Permissible loading rates have been established for both phosphorus and nitrogen, the two primary nutrients influencing the trophic state of lakes. The current phosphorus load of 597 tons per year to Lake Okeechobee is 10 percent above the permissible phosphorus loading rate of Shannon and Brezonik. The 7907 tons of nitrogen per year input into the Lake is 51 percent higher than the Shannon and Brezonik permissible nitrogen loading rate.

<u>Nutrient Load Allocations</u>

In order to evaluate the nutrient contribution of each drainage basin relative to the lakewide permissible and dangerous loading rates, the permissible and dangerous loading rates need to be proportioned among each drainage basin. The nutrient load allocations presented here were based upon the size of each drainage basin tributary to Lake Okeechobee, and the permissible loading levels reported by Shannon and Brezonik (1972). Although other allocation procedures are available (i.e. allocations based upon volume of water discharged, economic considerations, etc.) an allocation based upon drainage basin areas was selected because areal export rates are the most common method of standardizing the amount of nutrients exported from a given land area. Since rainfall is a significant nutrient source, the phosphorus allocation was first corrected for rainfall by substracting the contribution of rainfall (98 tons) from the permissible phosphorus loading level of 540 tons. The remaining 442 tons were then divided by the total area of Lake Okeechobee watershed (exclusive of the lake's surface area). This resulted in a phosphorus allocation, corrected for rainfall, of 0.120 tons P/sq mi drained per year (0.38 lbs P/acre-yr). This allocation for each individual basin is such that the total phosphorus load to the Lake would equal the permissible loading rate. Table V-8 presents these phosphorus allocations for the major inflows to Lake Okeechobee. Also calculated in Table V-8 is the difference between each drainage basin's present phosphorus load and its

TABLE V-7. SUMMARY OF PERMISSIBLE AND DANGEROUS LOADING RATES FOR LAKE OKEECHOBEE

Parameter	Reference	Total Load to Lake (tons)	Permissible[1/] (tons)	Load Above Permissible (tons)	% Reduction Needed to Meet Permissible	Dangerous[2/] (tons)	Load Above Dangerous (tons)	% Reduction Needed to Meet Dangerous
Phosphorus	Vollenweider (1975)	597	231	366	61%	444	153	26%
	Shannon and Brezonik (1972)	597	540	57	10%	945	-	-
Nitrogen	Vollenweider (1968)	7907	1928	5979	76%	3857	4050	51%
	Shannon and Brezonik (1972)	7907	3857	4050	51%	6556	1351	17%

1/ Permissible represents a loading rate that will give a lake a high probability of maintaining an oligotrophic state.

2/ Dangerous represents a loading rate above which a lake has a high probability of proceeding to a eutrophic/hypereutrophic state.

NOTE: The average Lake surface area from 1974 - 1976 of 432,200 acres was used in calculating the permissible and dangerous loading rates.

TABLE V-8. PERMISSIBLE PHOSPHORUS LOAD ALLOCATIONS FOR LAKE OKEECHOBEE

Source	Drainage Basin Area (sq. mi.)	Current Avg. Load (tons)	Allocation to meet permissible loading (tons P)	Excess load above permissible allocation (tons P)	% Excess
Rainfall		98	98		
Kissimmee River Basin	2335	129	280	-151	-
Taylor Creek/ Nubbin Slough	184	160	22	138	86%
EAA	427	88	51	37	42%
Harney Pond Canal Indian Prairie Canal	286	53	34	19	36%
Fisheating Creek	461	69	55	14	20%
	3693	597			

NOTE: Permissible loads were based on Shannon and Brezonik (1972)

$$\text{Permissible loading allocation} = \frac{\text{Permissible Loading Rate - Contribution by rainfall}}{\text{Area of Lake Okeechobee Watershed}}$$

$$= 0.120 \text{ tons P.sq. mi drained-yr}$$

respective allocation. The Kissimmee River is the only basin which is below its permissible phosphorus allocation. The Taylor Creek/Nubbin Slough Basin exceeds its allocation by 86 percent. The combined Indian Prairie-Harney Pond Canals exceed their allocation by 36 percent. The EAA is 42 percent above its allocation while Fisheating Creek is 20 percent above its permissible phosphorus allocation.

Nitrogen allocations were calculated in a similar manner at both the permissible and dangerous levels (Table V-9). At the dangerous levels the Kissimmee River and Fisheating Creek are below their allocations. The Taylor Creek/Nubbin Slough and Harney Pond/Indian Prairie basins are 38 and 9 percent above their respective dangerous allocations. The EAA exceeds its dangerous allocation by the largest percentage, 80 percent, of any of the major inflows.

When the nitrogen allocation based on the permissible loading levels are considered, the Kissimmee River is 36 percent above its allocation. Fisheating Creek and Harney Pond-Indian Prairie Canals are 45 and 60 percent, respectively, above their permissible allocations. The present nitrogen load for Nubbin Slough increases to 73 percent above its allocation. The EAA exceeds its permissible allocation by 91 percent.

The calculations for the nitrogen allocations do not take into account any atmospheric losses of nitrogen (i.e. denitrification) which, if substantial, would have the effect of decreasing the net nitrogen contribution of rainfall thereby increasing the nitrogen allocation for each basin.

Lake Management

Similar reasoning and arguments used in selecting permissible loading criteria as a method of assessing the impact of nutrient loads on Lake Okeechobee can be employed to also support the use of permissible loading criteria as a tool for managing the trophic state of the Lake. Based upon the permissible loading rates of Shannon and Brezonik (1972), a 10 percent lakewide reduction in the phosphorus

TABLE V-9. DANGEROUS AND PERMISSIBLE NITROGEN LOAD ALLOCATIONS FOR LAKE OKEECHOBEE

			Permissible Levels			Dangerous Levels		
Source	Drainage Basin Area (sq. Mi.)	Current Avg. Load (tons N)	Allocation to meet permissible loadings (tons N)	Excess load above permissible allocations (tons N)	% Excess	Allocation to meet dangerous loadings (tons N)	Excess load above dangerous allocations (tons N)	% Excess
Rainfall		1725	1725			1725		
Kissimmee R. Basin	2335	2103	1347	756	36%	3054	-951	-
Taylor Creek/ Nubbin Slough	184	387	106	281	73%	241	146	38%
EAA	427	2798	246	2552	91%	559	2239	80%
Harney Pond Indian Prairie Canal	286	413	165	248	60%	374	39	9%
Fisheating Creek	461	481	266	215	45%	603	-122	-
	3693	7907						

NOTE: Dangerous and Permissible Loads were based on Shannon and Brezonik (1972)

$$\text{Permissible Loading Allocation} = \frac{\text{Permissible N Loading Rate - Rainfall Contribution}}{\text{Area of Lake Okeechobee Watershed}} = 0.579 \text{ tons N/sq mi drained-yr}$$

$$\text{Dangerous Loading Allocation} = \frac{\text{Dangerous N Loading Rate - Rainfall Contribution}}{\text{Area of Lake Okeechobee Watershed}} = 1.308 \text{ tons N/sq mi drained-yr}$$

input and a 50 percent reduction in the nitrogen input would be needed in order to increase the probability of altering the trophic state of Lake Okeechobee toward a more desirable state. Since phosphorus and nitrogen occur together in natural waters, methods designed to reduce the level of one nutrient would also cause some reduction in the level of the other nutrient. There are three basic alternatives for lake management based upon the control of phosphorus and nitrogen. The first alternative would be to manage the Lake based solely upon controlling the phosphorus input. At first approximation this would appear to be the easiest and best approach to take for several reasons. As an element phosphorus is relatively easy to control since there are no pathways for gaseous atmospheric introduction. There is also the argument that phosphorus usually limits primary productivity in lakes, implying that a reduction in phosphorus would elicit a reduced primary productivity rate and an improved trophic state. However, some evidence exists which is contrary to the argument for controlling only phosphorus. Since the Lake is relatively shallow and has a large fetch, wind turbulence can resuspend the phosphorus rich bottom sediments which may cause a release of enough phosphorus into the overlying water to meet a sizable portion of the Lake's current phosphorus demand. If this does occur then a reduction in the allochthonous (tributary) input may not result in the desired reduction in the primary productivity and an improved trophic state.

The second alternative to managing the trophic state of Lake Okeechobee is based entirely upon the control of nitrogen inputs. This approach also has some drawbacks and difficulties associated with it. First it is difficult to completely regulate the total influx of nitrogen to Lake Okeechobee since biological pathways exist for the gaseous atmospheric introduction of nitrogen directly into the Lake. Second, if nitrogen is not limiting at some time or in some areas of the Lake then the partial control of its influx may not be beneficial.

Due to the large area of the Lake (735 sq. mi.) and the diverse nutrient quality of the inflows (Davis and Marshall 1975) there is the possibility that neither phosphorus nor nitrogen is limiting in all areas of the Lake at all times. The limiting nutrient could vary depending upon the time of year and where the major inflows were occurring.

Since it is presently unclear to what extent the sediments in Lake Okeechobee serve as a source of phosphorus and which nutrient is limiting in the Lake, a third alternative would incorporate some action to control both the phosphorus and nitrogen inputs to the Lake. This third alternative would have the greatest likelihood of successfully managing the trophic state of the Lake since it addresses the two major nutrients affecting eutrophication. However, from a management perspective chances of successful implementation of a nutrient reduction program would be greatly increased if efforts could be focused upon one nutrient at a time. Control of phosphorus inputs should receive primary consideration since its control has been shown to improve the trophic state of other lakes (Schindler 1974). After a phosphorus control program has been implemented, a secondary effort could be effected to reduce the nitrogen inputs into the Lake. The overall effect would be to reduce the input of both nutrients responsible for the eutrophication process in an order which would maximize the chances of improving the trophic state of Lake Okeechobee in the shortest period of time.

REFERENCES

Brezonik, P.L., Morgan, W.H., Shannon, E.E., and H.D. Putnam. 1969. Eutrophication factors in north central Florida lakes. Bull. Series 134, Eng. Industr. Expt. Sta., Univ. Florida, Gainesville, 101 p.

Brezonik, Patrick L. and Anthony Federico. 1975. Effects of backpumping from agricultural drainage canals on water quality in Lake Okeechobee. Rept. ENV-07-75-2, Dept. Environmental Engineering, Univ. of Florida, Gainesville, Tech. Rept. Ser. Vol. 1, No. 1, Dept. Environ. Regulation, State of Florida, Tallahassee.

Davis, Frederick E. and Michael L. Marshall. 1975. Chemical and biological investigations of Lake Okeechobee. January 1973 - June 1974 interim report. Technical Publication #75-1. Central and Southern Florida Flood Control District, West Palm Beach, Florida.

Department of Administration, Division of State Planning. 1976. Final report on the special project to prevent eutrophication of Lake Okeechobee. Tallahassee, Florida, 341 p.

Environmental Protection Agency National Eutrophication Survey. Unpublished. Preliminary report on Lake Okeechobee, Florida. EPA Region IV. 1976.

Joyner, Boyd F. 1971. Appraisal of chemical and biological conditions of Lake Okeechobee. U.S.G.S. open file report 71006.

Joyner, Boyd F. 1974. Chemical and biological conditions of Lake Okeechobee, Florida. 1969-72. Report of Investigations No. 71. Tallahassee, Florida.

Riebsame, William E., William L. Woodley, Frederick E. Davis. 1974. Radar inference of Lake Okeechobee rainfall for use in environmental studies. Weatherwise, 27(5): 206-211.

Sakamoto, M. 1969. Primary production by phytoplankton community in some Japanese lakes and its dependence on lake dpeth, Arch. Hydrobiol. 62(1):1.

Schindler, D.W. 1974. Eutrophication and recovery in experimental lakes. Implications for Lake Management. Science 184: 897-899.

Schindler, D.W. 1977. Evolution of phosphorus limitation in lakes. Science 195: 260-262.

Shannon, E.E. 1977. Water quality studies in the Everglades Agricultural Area of Florida. Draft engineering report submitted to the Florida Sugar Cane League by BC&E/CH2M Hill.

Shannon, E.E. and P.L. Brezonik. 1972. Relationships between lake trophic state and nitrogen and phosphorus loading rates. Environ. Sci. Technology 6(8): 719-725.

Vollenweider, R.A. 1968. Scientific fundamentals of the eutrophication of lake and flowing waters, with particular reference to nitrogen and phosphorus as factors in eutrophication. Tech. Report, DAS/CSI, 68.27, OECD, Paris, France.

Vollenweider, Richard A. 1975. Input-output models with special reference to the phosphorus loading concept in limnology. Schweiz Z. Hydrol., 37, 53-84.

Waller, Bradley G. and J.E. Earle. 1975. Chemical and biological quality of water in part of the Everglades, Southeastern Florida. U.S. Geological Survey Water Resources Investigations, 56-75.

APPENDIX A

WATER CHEMISTRY ANALYTICAL METHODS

APPENDIX A

ANALYTICAL METHODS

AUTOANALYZER

Determination	Method	Range	Sensitivity
Alkalinity	1. Methyl Orange; Technicon AutoAnalyzer II, method #111-71W	0-5 meq/l	0.1 meq/l 2% of full scale
	2. Potentiometric titration Ref. Standard Methods, 13th edition, p. 52-56.	0-10 meq/l	0.3 meq/l
Ammonia	Berthelot reaction Technicon AA II, method #154-71W. Ref: D. D. Van Slyke & A. J. Hillen, Bio Chem. 102, p. 499, 1933; S. Kallman, Presentation, April 1967, San Diego, Calif; W. T. Bolleter, C. J. Bushman & P. N. Tidswell, Anal. Chem. 33, p. 592, 1961; J. A. Tellow & A. L. Wilson, Analyst, 89, p. 453, 1964; A. Tarugi & F. Lenci, Boll Chim Farm, 50, p. 907, 1912; FWPCA Methods of Chem. Anal. of Water & Waste Water, Nov. 1969, p. 137.	0-0.50 ppm	0.010 ppm 2% of full scale
Chloride	Ferric Thiocyanate complex Technicon AA II, method #99-70W Ref: Automatic Analysis of Chlorides in Sewage, James E. O'Brien, Wastes Engineering, Dec. 1962; D. M. Zall, D. Fisher & M. D. Garner, Anal. Chem. 28, 1956, p. 1665	0-200 ppm	4.0 ppm 2% of full scale
Nitrite	Diazotization method which couples with N-1-naphthylene-diamine dihydrochloride. Technicon AA II; method #120-70W, modified for linear sensitivity. Ref. Standard Methods, 12th edition, 1965, p. 205	0-0.200 ppm	.004 ppm 2% of full scale
Nitrate	Same as Nitrite with Cadmium Reduction column Technicon AA II, method #100-70W, modified for linear sensitivity.	0-0.200 ppm	.004 ppm 2% of full scale
Nitrogen, Total Kjeldahl	Digestion with H_2SO_4 and HgO catalyst in Technicon BD-40 Block Digestor, Technicon AA II, Method 376-75W/A followed by Ammonia determination. Technicon AA II, Method 334-74A/A	0-5 or 10 mg/l	.10 or .20 mg/l 2% of full scale

APPENDIX A (Continued)

AUTOANALYZER

Determination	Method	Range	Sensitivity
Ortho-Phosphate	Phosphomolybdenum blue complex with ascorbic acid reduction. Technicon AA II; method #155-71W Ref. J. Murphy & J. P. Riley, Anal. Chim. Acta, 27, p. 30, 1962.	0-0.100 ppm	.002 2% of full scale
Phosphate, Total	Same as Ortho-Phosphate with persulfate digestion. Modified Standard Methods procedure: 13th edition, p. 525, 1971. Technicon AA II; method #93-70W	0-0.100 ppm	.002 2% of full scale
Silicate	Ascorbic acid reduction of silicomolybdate complex to "Molybdenum blue", Technicon AA II, method #105-71W.	0-20 ppm	0.4 ppm 2% of full scale
Sulfate	Barium chloride, Methylthmol Blue chelation, Technicon AA II, method #118-71W	0-250 mg/l	5 mg/l 2% of full scale
Total Iron	Same as Total Dissolved Iron with HCl digestion. Modified Standard Method procedure: 13th Edition, pp. 192, 1971.	0-1 ppm	0.02 ppm 2% of full scale

PHYSICAL PARAMETERS

Determination	Method	Range	Sensitivity
Suspended Solids	Standard Methods procedure: 208D, 14th Edition, pp 94, 1976.	20 mg/l to 20,000 mg/l	.4 mg/l or 5%
Turbidity	Standard Methods Nephelometric procedure, 214A, 14th Edition, pp. 132, 1976	0-1,000 NTU	2% of scale used
Color	Standard Methods procedure: 204A (Modified as per N.C.A.S.I. technical bulletin No. 253) 14th edition, pp. 64, 1976	0.0 to 500 mg/l as Platinum in a platinum-cobalt solution	5.0 mg/l 2% of full scale

APPENDIX A (Continued)

ATOMIC ABSORPTION

Parameter	Wavelength	Flame	Comments
Sodium	589.0 nm-vis. (SLIT 1.4 nm)	Air and acetylene	Dual capillary system (DCS) as described by T. H. Miller and W. H. Edwards, Atomic Absorption Newsletter 15, No. 3 (1976).
Potassium	766.5 nm-vis. (SLIT 1.4 nm)	Air and acetylene	Sample treatment as described for sodium
Calcium	422.7 nm-vis. (SLIT 0.7 nm)	Air and acetylene	Samples treated with La_2O_3/HCl using Dual Capillary System (DCS) as described by T. H. Miller and W. H. Edwards, Atomic Absorption Newsletter 15, No. 3 (1976).
Magnesium	285.2 nm-uv (SLIT 0.7 nm)	Air and acetylene	Sample treatment as described for calcium.
Copper	324.7 nm-uv (SLIT 0.7 nm)	HGA	Charring temp. 1000°C Atomize temp. 2700°C

APPENDIX B

ANALYTICAL RESULTS FROM RECEIVING CANAL SITES ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES

APPENDIX B. ANALYTICAL RESULTS FROM RECEIVING CANAL SITES ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES

1. SUGARCANE FARM #1

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	UPSTR OR DOWNSTR	DISCHRGE CODE
6/ 4/76	MIA-68.7	1100.	1=UP	1=YES
6/ 4/76	MIA-68.6	1120.	2=DOWN	1=YES
6/ 4/76	MIA-68.1	1145.	2=DOWN	1=YES
6/ 4/76	MIA-68.4	1225.	2=DOWN	1=YES
6/16/76	MIA-68.6	1115.	1=UP	2=NO
6/16/76	MIA-68.7	1135.	2=DOWN	2=NO
6/16/76	MIA-69.2	1200.	2=DOWN	2=NO
6/16/76	MIA-70.3	1245.	2=DOWN	2=NO
6/29/76	MIA-68.6	1045.	1=UP	2=NO
6/29/76	MIA-68.7	1130.	2=DOWN	2=NO
6/29/76	MIA-68.7	1130.	2=DOWN	2=NO
6/29/76	MIA-68.7	1130.	2=DOWN	2=NO
6/29/76	MIA-69.2	1200.	2=DOWN	2=NO
6/29/76	MIA-70.3	1230.	2=DOWN	2=NO
7/14/76	MIA-68.7	1230.	1=UP	2=NO
7/14/76	MIA-68.6	1130.	2=DOWN	2=NO
7/14/76	MIA-68.1	1200.	2=DOWN	2=NO
7/27/76	MIA-68.7	1300.	1=UP	2=NO
7/27/76	MIA-68.7	1300.	1=UP	2=NO
7/27/76	MIA-68.7	1300.	1=UP	2=NO
7/27/76	MIA-68.1	1215.	2=DOWN	2=NO
7/27/76	MIA-68.6	1240.	2=DOWN	2=NO
8/11/76	MIA-68.7	1130.	1=UP	2=NO
8/11/76	MIA-68.6	1200.	2=DOWN	2=NO
8/11/76	MIA-68.6	1200.	2=DOWN	2=NO
8/11/76	MIA-68.6	1200.	2=DOWN	2=NO
8/11/76	MIA-68.1	1230.	2=DOWN	2=NO
9/ 8/76	MIA-68.7	1330.	1=UP	2=NO
9/ 8/76	MIA-68.6	1400.	2=DOWN	2=NO
9/ 8/76	MIA-68.6	1400.	2=DOWN	2=NO
9/ 8/76	MIA-68.6	1400.	2=DOWN	2=NO
9/ 8/76	MIA-68.1	1420.	2=DOWN	2=NO
9/23/76	MIA-68.7	1140.	1=UP	2=NO
9/23/76	MIA-68.6	1200.	2=DOWN	2=NO
9/23/76	MIA-68.6	1200.	2=DOWN	2=NO
9/23/76	MIA-68.6	1200.	2=DOWN	2=NO
9/23/76	MIA-68.1	1230.	2=DOWN	2=NO
10/ 5/76	MIA-68.7	1300.	1=UP	2=NO
10/ 5/76	MIA-68.6	1320.	2=DOWN	2=NO
10/ 5/76	MIA-68.6	1320.	2=DOWN	2=NO

APPENDIX B-1 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	UPSTR OR DOWNSTR	DISCHRGE CODE
10/ 5/76	MIA-68.6	1320.	2=DOWN	2=NO
10/ 5/76	MIA-68.1	1340.	2=DOWN	2=NO
11/ 9/76	MIA-68.7	1040.	1=UP	2=NO
11/ 9/76	MIA-68.6	1055.	2=DOWN	2=NO
11/ 9/76	MIA-68.1	1105.	2=DOWN	2=NO
11/30/76	MIA-68.7	1115.	1=UP	2=NO
11/30/76	MIA-68.6	1135.	2=DOWN	2=NO
11/30/76	MIA-68.1	1155.	2=DOWN	2=NO
2/ 8/77	MIA-68.7	1040.	1=UP	1=YES
2/ 8/77	MIA-68.6	1100.	2=DOWN	1=YES
2/ 8/77	MIA-68.6	1100.	2=DOWN	1=YES
2/ 8/77	MIA-68.6	1100.	2=DOWN	1=YES
2/ 8/77	MIA-68.1	1120.	2=DOWN	1=YES
3/ 8/77	MIA-68.7	1245.	1=UP	2=NO
3/ 8/77	MIA-68.6	1300.	2=DOWN	2=NO
3/ 8/77	MIA-68.6	1300.	2=DOWN	2=NO
3/ 8/77	MIA-68.6	1300.	2=DOWN	2=NO
3/ 8/77	MIA-68.1	1320.	2=DOWN	2=NO
4/12/77	MIA-68.7	1500.	1=UP	2=NO
4/12/77	MIA-68.6	1520.	2=DOWN	2=NO
4/12/77	MIA-68.1	1540.	2=DOWN	2=NO

APPENDIX B-1 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	NO3 MG/L	NO2 MG/L	NH4 MG/L	TKN MG/L	TOTAL N MG/L
6/ 4/76	MIA-68.7	1100.	1.896	0.129	0.07	2.98	5.01
6/ 4/76	MIA-68.6	1120.	1.012	0.062	0.03	2.81	3.88
6/ 4/76	MIA-68.1	1145.	1.357	0.076	0.20	2.56	3.99
6/ 4/76	MIA-68.6	1225.	1.174	0.066	0.10	3.15	4.39
6/16/76	MIA-68.6	1115.	0.759	0.058	0.22	3.01	3.83
6/16/76	MIA-68.7	1135.	0.746	0.058	0.22	2.91	3.71
6/16/76	MIA-69.2	1200.	0.855	0.061	0.22	2.90	3.82
6/16/76	MIA-70.3	1245.	1.150	0.075	0.25	3.08	4.30
6/29/76	MIA-68.6	1045.	2.788	0.041	0.13	3.34	6.17
6/29/76	MIA-68.7	1130.	1.752	0.042	0.11	3.27	5.06
6/29/76	MIA-68.7	1130.	1.734	0.042	0.13	3.35	5.13
6/29/76	MIA-68.7	1130.	1.747	0.042	0.13	3.42	5.21
6/29/76	MIA-69.2	1200.	1.795	0.049	0.12	3.49	5.33
6/29/76	MIA-70.3	1230.	1.993	0.061	0.18	3.45	5.50
7/14/76	MIA-68.7	1230.	0.532	0.050	0.10	3.51	4.09
7/14/76	MIA-68.6	1130.	0.586	0.041	0.09	4.38	5.01
7/14/76	MIA-68.1	1200.	0.529	0.047	0.11	3.71	4.29
7/27/76	MIA-68.7	1300.	0.612	0.033	0.01	2.82	3.47
7/27/76	MIA-68.7	1300.	0.392	0.033	0.01	3.17	3.60
7/27/76	MIA-68.7	1300.	0.384	0.033	0.02	2.66	3.08
7/27/76	MIA-68.1	1215.	0.431	0.040	0.01	0.26	0.73
7/27/76	MIA-68.6	1240.	0.426	0.034	0.02	2.90	3.36
8/11/76	MIA-68.7	1130.	2.065	0.068	0.33	3.21	5.34
8/11/76	MIA-68.6	1200.	2.022	0.063	0.26	2.89	4.98
8/11/76	MIA-68.6	1200.	2.037	0.067	0.27	3.28	5.38
8/11/76	MIA-68.6	1200.	2.052	0.067	0.27	3.22	5.34
8/11/76	MIA-68.1	1230.	2.117	0.065	0.25	3.20	5.38
9/ 8/76	MIA-68.7	1330.	6.462	0.063	0.05	3.91	
9/ 8/76	MIA-68.6	1400.	6.810	0.066	0.08	3.90	10.78
9/ 8/76	MIA-68.6	1400.	6.932	0.064	0.07	3.98	10.98
9/ 8/76	MIA-68.6	1400.	7.020	0.063	0.08	4.00	11.08
9/ 8/76	MIA-68.1	1420.	6.217	0.067	0.10	3.88	10.16
9/23/76	MIA-68.7	1140.	3.328	0.061	0.11	3.31	6.70
9/23/76	MIA-68.6	1200.	3.419	0.062	0.05	2.99	6.47
9/23/76	MIA-68.6	1200.	3.214	0.063	0.04	3.09	6.37
9/23/76	MIA-68.6	1200.	3.167	0.064	0.03	3.77	7.00
9/23/76	MIA-68.1	1230.	3.211	0.061	0.13	3.73	7.00
10/ 5/76	MIA-68.7	1300.	5.581	0.100	0.08	2.35	8.03
10/ 5/76	MIA-68.6	1320.	7.008	0.103	0.09	2.43	9.54
10/ 5/76	MIA-68.6	1320.	5.625	0.103	0.08	2.18	7.91

APPENDIX B-1 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	NO3 MG/L		NO2 MG/L	NH4 MG/L	TKN MG/L	TOTAL N MG/L
10/ 5/76	MIA-68.6	1320.	5.555		0.103	0.09	2.23	7.89
10/ 5/76	MIA-68.1	1340.	5.537		0.109	0.10	1.94	7.59
11/ 9/76	MIA-68.7	1040.	0.321		0.012	0.11	1.74	2.04
11/ 9/76	MIA-68.6	1055.	0.289		0.010	0.12	1.73	2.03
11/ 9/76	MIA-68.1	1105.	0.302		0.009	0.07	1.85	2.16
11/30/76	MIA-68.7	1115.	0.068	<	0.004	0.12	2.11	
11/30/76	MIA-68.6	1135.	0.027		0.004	0.07	1.83	
11/30/76	MIA-68.1	1155.	0.044	<	0.004	0.09	1.76	
2/ 8/77	MIA-68.7	1040.	1.549		0.039	0.04	6.37	7.96
2/ 8/77	MIA-68.6	1100.	1.289		0.027	0.02	4.30	5.62
2/ 8/77	MIA-68.6	1100.	1.385		0.026	0.01	4.29	5.70
2/ 8/77	MIA-68.6	1100.	1.474		0.026	0.02	4.40	5.90
2/ 8/77	MIA-68.1	1120.	1.860		0.051	0.06	2.85	4.76
3/ 8/77	MIA-68.7	1245.	0.149		0.007	0.11	1.53	1.69
3/ 8/77	MIA-68.6	1300.	0.151		0.007	0.10	1.31	1.47
3/ 8/77	MIA-68.6	1300.	0.150		0.007	0.11	1.42	1.58
3/ 8/77	MIA-68.6	1300.	0.149		0.007	0.10	1.44	1.60
3/ 8/77	MIA-68.1	1320.	0.150		0.007	0.10	1.23	1.39
4/12/77	MIA-68.7	1500.	0.183	<	0.004	0.06	1.37	1.56
4/12/77	MIA-68.6	1520.	0.680		0.004	0.05	1.85	2.53
4/12/77	MIA-68.1	1540.	0.152		0.004	0.09	1.76	1.92

APPENDIX B-1 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN		O-PO4 MG/L	T-PO4 MG/L		SO4 MG/L	CL MG/L	ALK MEQ/L
6/ 4/76	MIA-68.7	1100.	<	0.002	0.028		97.4	127.0	6.62
6/ 4/76	MIA-68.6	1120.	<	0.002	0.019		88.7	120.0	5.96
6/ 4/76	MIA-68.1	1145.		0.011	0.022		89.9	120.2	5.94
6/ 4/76	MIA-68.4	1225.	<	0.002	0.021		85.9	121.2	6.07
6/16/76	MIA-68.6	1115.		0.016	0.086		71.0	117.7	7.53
6/16/76	MIA-68.7	1135.		0.013	0.024		71.0	116.3	7.39
6/16/76	MIA-69.2	1200.		0.023	0.025		69.4	117.7	7.53
6/16/76	MIA-70.3	1245.		0.016	0.022		73.5	115.5	8.00
6/29/76	MIA-68.6	1045.		0.017	0.030		108.8	116.4	6.05
6/29/76	MIA-68.7	1130.		0.013	0.031	<	5.0	114.4	6.28
6/29/76	MIA-68.7	1130.		0.014	0.027		110.0	115.2	6.36
6/29/76	MIA-68.7	1130.		0.014	0.030		110.8	116.2	6.51
6/29/76	MIA-69.2	1200.		0.008	0.042		117.8	118.6	6.43
6/29/76	MIA-70.3	1230.		0.004	0.036		142.5	118.6	6.36
7/14/76	MIA-68.7	1230.		1.248	1.258		91.5	117.2	5.37
7/14/76	MIA-68.6	1130.		1.036	1.115		92.5	115.4	5.44
7/14/76	MIA-68.1	1200.		1.141	1.141		91.8	116.0	5.28
7/2[illegible]/76	MIA-68.7	1300.		0.169	0.221		153.3	140.5	6.64
7/2[illegible]/76	MIA-68.7	1300.		0.169	0.321		134.6	140.5	6.68
7/2[illegible]/76	MIA-68.7	1300.		0.170	0.219		134.6	140.5	6.74
7/2[illegible]/76	MIA-68.1	1215.		0.166	0.253		110.9	139.0	6.81
7/2[illegible]/76	MIA-68.6	1240.		0.169	0.229		181.9	137.0	6.61
8/11/76	MIA-68.7	1130.		0.072	0.090		252.7	134.3	6.45
8/11/76	MIA-68.6	1200.		0.068	0.087		252.7	128.7	6.52
8/11/76	MIA-68.6	1200.		0.068	0.087		265.6	128.7	6.45
8/11/76	MIA-68.6	1200.		0.069	0.085		265.6	132.7	6.61
8/11/76	MIA-68.1	1230.		0.062	0.078		270.7	129.3	5.80
9/ 8/76	MIA-68.7	1330.		0.019	0.035		93.6	110.7	7.06
9/ 8/76	MIA-68.6	1400.		0.019	0.031		84.6	107.6	7.34
9/ 8/76	MIA-68.6	1400.		0.019	0.032		84.6	108.4	7.51
9/ 8/76	MIA-68.6	1400.		0.023	0.032		93.6	107.6	7.50
9/ 8/76	MIA-68.1	1420.		0.020	0.031		80.6	28.3	1.89
9/23/76	MIA-68.7	1140.		0.030	0.046		69.4	121.9	7.85
9/23/76	MIA-68.6	1200.		0.032	0.046		77.9	123.5	7.93
9/23/76	MIA-68.6	1200.			0.040		76.8	123.5	8.07
9/23/76	MIA-68.6	1200.		0.033	0.047		74.7	119.5	8.14
9/23/76	MIA-68.1	1230.		0.027	0.047		71.5	167.4	8.14
1[illegible]/ [illegible]/76	MIA-68.7	1300.		0.102	0.116		362.2	86.5	5.76
1[illegible]/ [illegible]/76	MIA-68.6	1320.		0.100	0.112		382.2	85.7	5.90
1[illegible]/ 5/76	MIA-68.6	1320.		0.099	0.112		387.3	85.7	6.38

APPENDIX B-1 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
10/ 5/76	MIA-68.6	1320.	0.100	0.112	392.3	86.5	6.54
10/ 5/76	MIA-68.1	1340.	0.116	0.111	399.3	88.9	6.54
11/ 9/76	MIA-68.7	1040.	0.008	0.038	76.7	113.6	3.80
11/ 9/76	MIA-68.6	1055.	0.023	0.036	77.7	118.4	3.80
11/ 9/76	MIA-68.1	1105.	0.014	0.035	77.2	111.5	3.61
11/30/76	MIA-68.7	1115.	0.027	0.049		111.5	4.36
11/30/76	MIA-68.6	1135.	0.023	0.034		113.1	4.24
11/30/76	MIA-68.1	1155.	0.027	0.036		115.1	4.36
2/ 8/77	MIA-68.7	1040.	0.006	0.029	108.0	112.6	6.68
2/ 8/77	MIA-68.6	1100.	0.004	0.025	107.2	112.0	7.00
2/ 8/77	MIA-68.6	1100.	0.009	0.027	108.2	124.6	6.93
2/ 8/77	MIA-68.6	1100.	0.009	0.028	108.0	108.9	6.65
2/ 8/77	MIA-68.1	1120.	0.009	0.033	118.9	124.6	6.65
3/ 8/77	MIA-68.7	1245.	0.016	0.030	62.4	100.4	2.94
3/ 8/77	MIA-68.6	1300.	0.010	0.035	61.3	109.2	2.99
3/ 8/77	MIA-68.6	1300.	0.019	0.043	60.8	99.6	2.98
3/ 8/77	MIA-68.6	1300.	0.011	0.031	62.4	99.2	3.01
3/ 8/77	MIA-68.1	1320.	0.013	0.032	62.4		
4/12/77	MIA-68.7	1500.	0.014	0.041	53.1	107.7	2.80
4/12/77	MIA-68.6	1520.	0.008	0.079	53.9	112.8	2.66
4/12/77	MIA-68.1	1540.	0.017	0.036	53.3	112.4	2.63

APPENDIX B-1 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	NA MG/L	K MG/L	CA MG/L	MG MG/L
6/ 4/76	MIA-68.7	1100.	81.75	8.66	124.96	29.83
6/ 4/76	MIA-68.6	1120.	78.26	6.78	119.76	28.39
6/ 4/76	MIA-68.1	1145.	79.09	7.37	116.96	28.11
6/ 4/76	MIA-68.4	1225.	77.76	7.01	120.23	28.21
6/16/76	MIA-68.6	1115.	74.54	6.34	128.04	
6/16/76	MIA-68.7	1135.	70.13	6.46	133.05	
6/16/76	MIA-69.2	1200.	73.75	6.38	131.26	
6/16/76	MIA-70.3	1245.	75.01	6.49	131.61	
6/29/76	MIA-68.6	1045.	70.09	0.52	133.77	30.68
6/29/76	MIA-68.7	1130.	71.21	0.53	127.32	30.04
6/29/76	MIA-68.7	1130.	70.09	0.55	128.93	31.55
6/29/76	MIA-68.7	1130.				
6/29/76	MIA-69.2	1200.	68.49	0.49	121.67	30.92
6/29/76	MIA-70.3	1230.	72.49	0.50	135.87	33.51
7/14/76	MIA-68.7	1230.	66.86	1.56	99.65	22.53
7/14/76	MIA-68.6	1130.	68.74	1.45	104.27	23.77
7/14/76	MIA-68.1	1200.	69.59	1.51	104.42	23.17
7/27/76	MIA-68.7	1300.	93.52	0.89	114.34	34.69
7/27/76	MIA-68.7	1300.	91.59	0.87	110.33	34.40
7/27/76	MIA-68.7	1300.	92.72	0.95	112.09	34.78
7/27/76	MIA-68.1	1215.	91.91	0.88	114.50	35.97
7/27/76	MIA-68.6	1240.	91.75	0.92	111.93	34.82
8/11/76	MIA-68.7	1130.	81.62	6.33	113.18	32.08
8/11/76	MIA-68.6	1200.	82.90	6.26	111.78	32.17
8/11/76	MIA-68.6	1200.	82.26	6.12	111.94	30.90
8/11/76	MIA-68.6	1200.	82.90	6.18	111.01	32.46
8/11/76	MIA-68.1	1230.	80.50	6.08	112.56	31.70
9/ 8/76	MIA-68.7	1330.	75.89	6.15	163.31	28.67
9/ 8/76	MIA-68.6	1400.	73.09	5.77	160.91	28.81
9/ 8/76	MIA-68.6	1400.	73.09	5.94	162.67	28.98
9/ 8/76	MIA-68.6	1400.	73.24	5.99	146.83	28.90
9/ 8/76	MIA-68.1	1420.	77.13	5.85	160.91	28.19
9/23/76	MIA-68.7	1140.	71.69	6.92	157.38	28.21
9/23/76	MIA-68.6	1200.	71.20	7.14	155.34	28.21
9/23/76	MIA-68.6	1200.	71.53	7.11	157.53	27.15
9/23/76	MIA-68.6	1200.	71.69	6.97	156.12	27.87
9/23/76	MIA-68.1	1230.	72.35	7.21	144.98	27.78
10/ 5/76	MIA-68.7	1300.	54.33	6.96	128.06	18.20
10/ 5/76	MIA-68.6	1320.	52.87	6.56	128.54	17.26
10/ 5/76	MIA-68.6	1320.	54.17	6.76	132.97	18.53

APPENDIX B-1 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	NA MG/L	K MG/L	CA MG/L	MG MG/L
10/ 5/76	MIA-68.6	1320.	54.01	6.72	132.65	18.16
10/ 5/76	MIA-68.1	1340.	53.52	6.75	133.29	17.95
11/ 9/76	MIA-68.7	1040.	82.73	7.15	70.46	24.88
11/ 9/76	MIA-68.6	1055.	79.07	7.17	75.33	24.96
11/ 9/76	MIA-68.1	1105.	76.63	7.27	75.33	24.22
11/30/76	MIA-68.7	1115.	71.34	6.19	54.32	22.08
11/30/76	MIA-68.6	1135.	70.62	6.25	54.92	22.20
11/30/76	MIA-68.1	1155.	70.62	6.35	53.13	21.81
2/ 8/77	MIA-68.7	1040.	71.42	5.80	124.50	29.47
2/ 8/77	MIA-68.6	1100.	69.04	5.71	123.52	29.72
2/ 8/77	MIA-68.6	1100.	70.15	5.68	125.31	30.02
2/ 8/77	MIA-68.6	1100.	70.31	5.73	124.01	30.15
2/ 8/77	MIA-68.1	1120.	78.10	5.92	116.36	31.04
3/ 8/77	MIA-68.7	1245.	61.49	6.20	54.73	20.40
3/ 8/77	MIA-68.6	1300.	61.96	6.21	53.71	20.19
3/ 8/77	MIA-68.6	1300.	62.74	6.26	53.71	20.36
3/ 8/77	MIA-68.6	1300.	64.00	6.26	54.44	20.27
3/ 8/77	MIA-68.1	1320.	63.53	6.21	53.41	20.06
4/12/77	MIA-68.7	1500.	68.47	4.74	49.58	21.17
4/12/77	MIA-68.6	1520.	68.16	4.90	52.43	21.51
4/12/77	MIA-68.1	1540.	68.16	4.66	49.90	21.59

APPENDIX B-1 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	TURB JTU	COLOR UNITS		CU MICROG/L
6/ 4/76	MIA-68.7	1100.	3.6			
6/ 4/76	MIA-68.6	1120.	5.0			2.7
6/ 4/76	MIA-68.1	1145.	4.6			3.1
6/ 4/76	MIA-68.4	1225.	5.5			4.3
6/16/76	MIA-68.6	1115.	2.0	165.0		2.4
6/16/76	MIA-68.7	1135.	4.4	85.0		0.9
6/16/76	MIA-69.2	1200.	1.6	100.0		0.8
6/16/76	MIA-70.3	1245.	1.4	117.0		0.7
6/29/76	MIA-68.6	1045.	3.7	128.0		1.5
6/29/76	MIA-68.7	1130.	3.9	133.0		1.0
6/29/76	MIA-68.7	1130.	4.0	145.0		0.9
6/29/76	MIA-68.7	1130.	4.6	147.0		1.1
6/29/76	MIA-69.2	1200.	4.2	161.0		1.8
6/29/76	MIA-70.3	1230.	4.7	172.0		1.1
7/14/76	MIA-68.7	1230.	1.6	154.0		
7/14/76	MIA-68.6	1130.	2.2	149.0		
7/14/76	MIA-68.1	1200.	1.8	155.0		
7/27/76	MIA-68.7	1300.	3.1	153.0		0.9
7/27/76	MIA-68.7	1300.	3.6	135.0		0.8
7/27/76	MIA-68.7	1300.	2.8	138.0		1.0
7/27/76	MIA-68.1	1215.	4.6	130.0		0.9
7/27/76	MIA-68.6	1240.	1.7	141.0		1.0
8/11/76	MIA-68.7	1130.	2.6	313.0	<	0.6
8/11/76	MIA-68.6	1200.	2.4	310.0		1.7
8/11/76	MIA-68.6	1200.	2.7	310.0	<	0.6
8/11/76	MIA-68.6	1200.	1.6	317.0	<	0.6
8/11/76	MIA-68.1	1230.	2.3	320.0	<	0.6
9/ 8/76	MIA-68.7	1330.	1.1	153.0		1.6
9/ 8/76	MIA-68.6	1400.	1.4	174.0		1.5
9/ 8/76	MIA-68.6	1400.	1.5	160.0		
9/ 8/76	MIA-68.6	1400.	1.7	162.0		0.7
9/ 8/76	MIA-68.1	1420.	2.6	159.0		1.7
9/23/76	MIA-68.7	1140.	2.2	133.0	<	0.6
9/23/76	MIA-68.6	1200.	2.4	136.0	<	0.6
9/23/76	MIA-68.6	1200.	2.6	140.0	<	0.6
9/23/76	MIA-68.6	1200.	2.1	160.0	<	0.6
9/23/76	MIA-68.1	1230.	2.2	147.0	<	0.6
10/ 5/76	MIA-68.7	1300.	1.1	158.0		3.1
10/ 5/76	MIA-68.6	1320.	1.3	184.0		4.1
10/ 5/76	MIA-68.6	1320.	1.1	213.0		7.4

APPENDIX B-1 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	TURB JTU	COLOR UNITS	CU MICROG/L
10/ 5/76	MIA-68.6	1320.	1.4	210.0	5.5
10/ 5/76	MIA-68.1	1340.	1.2	189.0	4.1
11/ 9/76	MIA-68.7	1040.	3.1	65.0	1.0
11/ 9/76	MIA-68.6	1055.	2.0	58.0	1.9
11/ 9/76	MIA-68.1	1105.	1.7	63.0	< 0.6
11/30/76	MIA-68.7	1115.	6.9	48.0	< 0.6
11/30/76	MIA-68.6	1135.	6.0	48.0	< 0.6
11/30/76	MIA-68.1	1155.	4.8	50.0	1.4
2/ 8/77	MIA-68.7	1040.	1.3	95.0	< 0.6
2/ 8/77	MIA-68.6	1100.	1.4	110.0	2.9
2/ 8/77	MIA-68.6	1100.	1.2	105.0	< 0.6
2/ 8/77	MIA-68.6	1100.	1.5	107.0	< 0.6
2/ 8/77	MIA-68.1	1120.	1.3	100.0	< 0.6
3/ 8/77	MIA-68.7	1245.	2.3	55.0	4.6
3/ 8/77	MIA-68.6	1300.	2.2	47.0	3.6
3/ 8/77	MIA-68.6	1300.	3.2	49.0	2.7
3/ 8/77	MIA-68.6	1300.	3.8	52.0	5.0
3/ 8/77	MIA-68.1	1320.	2.6	45.0	4.3
4/12/77	MIA-68.7	1500.	4.5	28.0	3.5
4/12/77	MIA-68.6	1520.	4.5	19.0	5.4
4/12/77	MIA-68.1	1540.	4.5	21.0	4.2

APPENDIX B. ANALYTICAL RESULTS FOR RECEIVING CANAL SITES ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES.

2. SUGARCANE FARM #2

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	UPSTR OR DOWNSTR	DISCHRGE CODE
6/17/76	WPB-25.4	1505.	1=UP	1=YES
6/17/76	WPB-25.5	1520.	2=DOWN	1=YES
7/ 1/76	WPB-25.5	1400.	1=UP	1=YES
7/ 1/76	WPB-25.4	1430.	2=DOWN	1=YES
7/ 1/76	WPB-24.0	1500.	2=DOWN	1=YES
7/30/76	WPB-25.5	1030.	1=UP	2=NO
7/30/76	WPB-25.4	1130.	2=DOWN	2=NO
8/24/76	WPB-25.4	1115.	1=UP	2=NO
8/24/76	WPB-25.5	1130.	2=DOWN	2=NO
9/21/76	WPB-25.5	1110.	1=UP	2=NO
9/21/76	WPB-25.4	1120.	2=DOWN	2=NO
12/ 2/76	WPB-25.5	1435.	1=UP	2=NO
12/ 2/76	WPB-25.4	1450.	2=DOWN	2=NO
2/ 9/77	WPB-25.5	1400.	1=UP	2=NO
2/ 9/77	WPB-25.4	1415.	2=DOWN	2=NO
4/11/77	WPB-25.4	1455.	1=UP	2=NO
4/11/77	WPB-25.5	1520.	2=DOWN	2=NO
4/11/77	WPB-25.5	1520.	2=DOWN	2=NO
4/11/77	WPB-25.5	1520.	2=DOWN	2=NO

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
6/17/76	WPB-25.4	1505.	0.038	0.072	109.4	260.6	7.36
6/17/76	WPB-25.5	1520.	0.017	0.041	105.0	270.7	7.16
7/ 1/76	WPB-25.5	1400.	0.079	0.143	144.7	212.5	7.58
7/ 1/76	WPB-25.4	1430.	0.104	0.137	153.0	214.5	7.58
7/ 1/76	WPB-24.9	1500.	0.103	0.137	146.6	212.5	7.38
7/30/76	WPB-25.5	1030.	0.009	0.037	88.3	222.9	5.94
7/30/76	WPB-25.4	1130.	0.009	0.033	91.2	226.1	6.13
8/24/76	WPB-25.4	1115.	0.032	0.146	41.7	218.1	7.68
8/24/76	WPB-25.5	1130.	0.032	0.327	30.0	214.9	7.52
9/21/76	WPB-25.5	1110.	0.089	0.109	130.1	222.3	8.25
9/21/76	WPB-25.4	1120.	0.100	0.107	131.1	220.7	8.35
12/ 2/76	WPB-25.5	1435.	0.022	0.033		131.7	5.07
12/ 2/76	WPB-25.4	1450.	0.029	0.035		134.7	5.22
2/ 9/77	WPB-25.5	1400.	0.059	0.118	105.9	258.7	7.11
2/ 9/77	WPB-25.4	1415.	0.067	0.140	96.9	254.5	7.05
4/11/77	WPB-25.4	1455.	0.050	0.101	61.6	107.1	2.58
4/11/77	WPB-25.5	1520.	0.056	0.105	53.1	108.7	2.58
4/11/77	WPB-25.5	1520.	0.055	0.086	53.1	109.8	2.61
4/11/77	WPB-25.5	1520.	0.052	0.104	53.1	108.1	2.76

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	NO3 MG/L	NO2 MG/L	NH4 MG/L	TKN MG/L	TOTAL N MG/L
6/17/76	WPB-25.4	1505.	1.027	0.112	2.01		
6/17/76	WPB-25.5	1520.	1.146	0.110	2.19	5.31	6.57
7/ 1/76	WPB-25.5	1400.	0.341	0.096	0.64	4.38	4.82
7/ 1/76	WPB-25.4	1430.	0.411	0.093	0.56	4.59	5.09
7/ 1/76	WPB-24.9	1500.	0.487	0.105	0.69	4.43	5.02
7/30/76	WPB-25.5	1030.	0.534	0.097	0.39	2.53	3.16
7/30/76	WPB-25.4	1130.	0.554	0.101	0.42	2.62	3.28
8/24/76	WPB-25.4	1115.	0.597	0.143	1.18	4.22	4.96
8/24/76	WPB-25.5	1130.	0.561	0.139	1.05	4.22	4.92
9/21/76	WPB-25.5	1110.	1.277	0.122	1.27	5.11	6.51
9/21/76	WPB-25.4	1120.	0.945	0.121	1.26	5.00	6.07
12/ 2/76	WPB-25.5	1435.	0.257	0.010	0.21	1.94	
12/ 2/76	WPB-25.4	1450.	0.242	0.010	0.22	2.08	
2/ 9/77	WPB-25.5	1400.	1.692	0.121	0.38	4.32	6.13
2/ 9/77	WPB-25.4	1415.	1.714	0.124	0.38	3.66	5.50
4/11/77	WPB-25.4	1455.	0.559	< 0.004	0.08	1.45	2.01
4/11/77	WPB-25.5	1520.	0.579	< 0.004	0.08	2.01	2.59
4/11/77	WPB-25.5	1520.	0.596	< 0.004	0.07	1.70	2.30
4/11/77	WPB-25.5	1520.	0.794	< 0.004	0.10	1.71	2.51

APPENDIX B-2 (CONTINUED)

APPENDIX B-2 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	NA MG/L	K MG/L	CA MG/L	MG MG/L
6/17/76	WPB-25.4	1505.	176.09	8.11	133.46	
6/17/76	WPB-25.5	1520.	176.71	7.07	134.30	
7/ 1/76	WPB-25.5	1400.	175.93	1.06	116.35	46.15
7/ 1/76	WPB-25.4	1430.	175.01	0.96	124.74	45.38
7/ 1/76	WPB-24.9	1500.	175.01	1.00	122.96	44.90
7/30/76	WPB-25.5	1030.	150.59	0.78	84.64	26.32
7/30/76	WPB-25.4	1130.	152.32	0.79	86.41	27.39
8/24/76	WPB-25.4	1115.	159.09	8.33	116.14	31.31
8/24/76	WPB-25.5	1130.	158.14	8.54	113.78	31.35
9/21/76	WPB-25.5	1110.	146.95	9.11	132.39	38.09
9/21/76	WPB-25.4	1120.	144.31	9.10	133.46	37.92
12/ 2/76	WPB-25.5	1435.	81.14	6.78	63.29	24.96
12/ 2/76	WPB-25.4	1450.	81.43	6.78	61.35	24.84
2/ 9/77	WPB-25.5	1400.	171.63	10.45	119.57	29.68
2/ 9/77	WPB-25.4	1415.	146.89	10.47	118.52	30.06
4/11/77	WPB-25.4	1455.	68.16	4.50	48.95	20.33
4/11/77	WPB-25.5	1520.	70.00	4.37	51.01	20.67
4/11/77	WPB-25.5	1520.	70.00	5.48	51.79	20.67
4/11/77	WPB-25.5	1520.	70.00	4.61	53.37	20.67

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	TURB JTU	COLOR UNITS	CU MICROG/L
6/17/76	WPB-25.4	1505.	1.6	155.0	0.4
6/17/76	WPB-25.5	1520.	1.3	115.0	< 0.4
7/ 1/76	WPB-25.5	1400.	10.1	285.0	0.4
7/ 1/76	WPB-25.4	1430.	10.2	260.0	< 0.4
7/ 1/76	WPB-24.9	1500.	10.0	283.0	< 0.4
7/30/76	WPB-25.5	1030.	6.4		0.4
7/30/76	WPB-25.4	1130.	7.2	130.0	0.9
8/24/76	WPB-25.4	1115.	1.3	204.0	< 0.6
8/24/76	WPB-25.5	1130.	4.3	184.0	< 0.6
9/21/76	WPB-25.5	1110.	2.6	260.0	< 0.6
9/21/76	WPB-25.4	1120.	3.5	233.0	< 0.6
12/ 2/76	WPB-25.5	1435.	6.1	55.0	4.2
12/ 2/76	WPB-25.4	1450.	5.4	55.0	4.7
2/ 9/77	WPB-25.5	1400.	2.2	160.0	2.5
2/ 9/77	WPB-25.4	1415.	3.0	157.0	3.1
4/11/77	WPB-25.4	1455.	15.4	30.0	4.2
4/11/77	WPB-25.5	1520.	16.5	26.0	3.5
4/11/77	WPB-25.5	1520.	16.0	29.0	2.8
4/11/77	WPB-25.5	1520.	19.0	28.0	2.6

APPENDIX B. ANALYTICAL RESULTS FOR RECEIVING CANAL SITES ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES.

3. CATTLE RANCH # 1

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	UPSTR OR DOWNSTR	DISCHRGE CODE
6/ 1/76	WPB-31.5	1120.	1=UP	1=YES
6/ 1/76	WPB-31.4	1150.	2=DOWN	1=YES
6/ 1/76	WPB-30.4	1215.	2=DOWN	1=YES
6/ 1/76	WPB-29.9	1245.	2=DOWN	1=YES
6/17/76	WPB-31.4	1420.	1=UP	2=NO
6/17/76	WPB-31.5	1320.	2=DOWN	2=NO
6/17/76	WPB-33.5	1340.	2=DOWN	2=NO
7/ 1/76	WPB-31.5	1540.	1=UP	2=NO
7/ 1/76	WPB-31.4	1630.	2=DOWN	2=NO
7/15/76	WPB-31.5	1100.	1=UP	2=NO
7/15/76	WPB-31.4	1125.	2=DOWN	2=NO
7/15/76	WPB-31.6	1150.	2=DOWN	2=NO
7/30/76	WPB-31.4	830.	1=UP	2=NO
7/30/76	WPB-31.5	900.	2=DOWN	2=NO
7/30/76	WPB-31.5	900.	2=DOWN	2=NO
7/30/76	WPB-31.5	900.	2=DOWN	2=NO
7/30/76	WPB-31.6	940.	2=DOWN	2=NO
8/12/76	WPB-31.4	1030.	1=UP	2=NO
8/12/76	WPB-31.5	1100.	2=DOWN	2=NO
8/12/76	WPB-31.5	1100.	2=DOWN	2=NO
8/12/76	WPB-31.5	1100.	2=DOWN	2=NO
8/12/76	WPB-33.5	1130.	2=DOWN	2=NO
8/24/76	WPB-31.4	1000.	1=UP	2=NO
8/24/76	WPB-31.5	1020.	2=DOWN	2=NO
8/24/76	WPB-31.5	1020.	2=DOWN	2=NO
8/24/76	WPB-31.5	1020.	2=DOWN	2=NO
8/24/76	WPB-33.5	1040.	2=DOWN	2=NO
9/ 9/76	WPB-31.5	1045.	1=UP	1=YES
9/ 9/76	WPB-31.5	1045.	1=UP	1=YES
9/ 9/76	WPB-31.5	1045.	1=UP	1=YES
9/ 9/76	WPB-31.4	1110.	2=DOWN	1=YES
9/ 9/76	WPB-31.6	1125.	2=DOWN	1=YES
9/21/76	WPB-31.5	1015.	1=UP	1=YES
9/21/76	WPB-31.4	1025.	2=DOWN	1=YES
9/21/76	WPB-31.4	1025.	2=DOWN	1=YES
9/21/76	WPB-31.4	1025.	2=DOWN	1=YES
9/21/76	WPB-31.6	1045.	2=DOWN	1=YES
10/ 6/76	WPB-31.4	1140.	1=UP	2=NO
10/ 6/76	WPB-31.5	1200.	2=DOWN	2=NO
10/ 6/76	WPB-31.5	1200.	2=DOWN	2=NO

APPENDIX B-3 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	UPSTR OR DOWNSTR	DISCHRGE CODE
10/ 6/76	WPB-31.5	1200.	2=DOWN	2=NO
10/ 6/76	WPB-33.5	1230.	2=DOWN	2=NO
12/ 2/76	WPB-31.5	1315.	1=UP	2=NO
12/ 2/76	WPB-31.4	1335.	2=DOWN	2=NO
12/ 2/76	WPB-31.6	1355.	2=DOWN	2=NO
12/ 2/76	WPB-31.6	1355.	2=DOWN	2=NO
12/ 2/76	WPB-31.6	1355.	2=DOWN	2=NO
2/ 9/77	WPB-31.5	1300.	1=UP	2=NO
2/ 9/77	WPB-31.4	1320.	2=DOWN	2=NO
2/ 9/77	WPB-31.4	1320.	2=DOWN	2=NO
2/ 9/77	WPB-31.4	1320.	2=DOWN	2=NO
2/ 9/77	WPB-31.6	1335.	2=DOWN	2=NO
3/ 9/77	WPB-31.4	1310.	1=UP	2=NO
3/ 9/77	WPB-31.5	1330.	2=DOWN	2=NO
3/ 9/77	WPB-31.5	1330.	2=DOWN	2=NO
3/ 9/77	WPB-31.5	1330.	2=DOWN	2=NO
3/ 9/77	WPB-33.5	1400.	2=DOWN	2=NO
4/11/77	WPB-31.4	1330.	1=UP	2=NO
4/11/77	WPB-31.5	1350.	2=DOWN	2=NO
4/11/77	WPB-33.5	1415.	2=DOWN	2=NO

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	NO3 MG/L	NO2 MG/L	NH4 MG/L	TKN MG/L	TOTAL N MG/L
6/ 1/76	WPB-31.5	1120.	0.613	0.109	1.88	5.34	6.06
6/ 1/76	WPB-31.4	1150.	0.489	0.095	1.67	5.19	5.77
6/ 1/76	WPB-30.4	1215.	0.405	0.104	1.72	5.27	5.78
6/ 1/76	WPB-29.8	1245.	0.361	0.101	1.55	5.08	5.54
6/17/76	WPB-31.4	1420.	0.123	0.086	1.72	4.57	4.78
6/17/76	WPB-31.5	1320.	0.158	0.081	1.79	5.08	5.32
6/17/76	WPB-33.5	1340.	0.126	0.082	1.81	5.25	5.46
7/ 1/76	WPB-31.5	1540.	1.061	0.125	0.81	4.69	5.88
7/ 1/76	WPB-31.4	1630.					
7/15/76	WPB-31.5	1100.	0.440	0.134	0.33	4.24	4.81
7/15/76	WPB-31.4	1125.	0.440	0.134	0.33	4.04	4.61
7/15/76	WPB-31.0	1150.	0.478	0.135	0.29	3.97	4.58
7/30/76	WPB-31.4	830.	0.323	0.106	0.19	2.77	3.20
7/30/76	WPB-31.5	900.	0.781	0.107	0.17	2.85	3.74
7/30/76	WPB-31.5	900.	0.334	0.107	0.17	2.83	3.27
7/30/76	WPB-31.5	900.	0.331	0.107	0.15	2.85	3.29
7/30/76	WPB-31.0	940.	0.348	0.105	0.16	2.79	3.24
8/12/76	WPB-31.4	1030.	0.297	0.077	0.65	3.96	4.33
8/12/76	WPB-31.5	1100.	0.299	0.075	0.67	3.85	4.22
8/12/76	WPB-31.5	1100.	0.288	0.075	0.67	3.69	4.05
8/12/76	WPB-31.5	1100.	0.285	0.076	0.67	4.14	4.50
8/12/76	WPB-33.5	1130.	0.280	0.076	0.70	3.70	4.06
8/24/76	WPB-31.4	1000.	0.485	0.111	0.65	3.97	4.57
8/24/76	WPB-31.5	1020.	0.453	0.106	0.69	3.97	4.53
8/24/76	WPB-31.5	1020.	0.497	0.112	0.69	4.01	4.62
8/24/76	WPB-31.5	1020.	0.482	0.114	0.69	4.09	4.69
8/24/76	WPB-33.5	1040.	0.371	0.112	0.49	4.02	4.50
9/ 9/76	WPB-31.5	1045.	3.402	0.152	1.69	6.36	9.91
9/ 9/76	WPB-31.5	1045.	3.369	0.154	1.68	6.42	9.94
9/ 9/76	WPB-31.5	1045.	3.471	0.154	1.69	6.40	10.02
9/ 9/76	WPB-31.4	1110.	2.864	0.181	1.65	5.92	8.96
9/ 9/76	WPB-31.0	1125.	2.858	0.182	1.66	6.03	9.07
9/21/76	WPB-31.5	1015.	0.984	0.168	0.94	4.69	5.84
9/21/76	WPB-31.4	1025.	0.766	0.158	0.99	4.68	5.60
9/21/76	WPB-31.4	1025.	0.731	0.160	0.95	4.76	5.65
9/21/76	WPB-31.4	1025.	0.843	0.168	0.98	4.77	5.78
9/21/76	WPB-31.0	1045.	0.641	0.158	0.95	4.75	5.55
10/ 6/76	WPB-31.4	1140.	1.098	0.208	0.41	3.00	4.31
10/ 6/76	WPB-31.5	1200.	1.079	0.222	0.40	3.20	4.50
10/ 6/76	WPB-31.5	1200.	1.061	0.215	0.41	3.19	4.47

APPENDIX B-3 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	NO3 MG/L	NO2 MG/L	NH4 MG/L	TKN MG/L	TOTAL N MG/L
11/ 6/76	WPB-31.5	1200.	1.051	0.215	0.41	2.92	4.19
11/ 6/76	WPB-33.5	1230.	0.975	0.226	0.37	3.51	4.71
12/ 2/76	WPB-31.5	1315.	0.208	0.014	0.13	1.31	
12/ 2/76	WPB-31.4	1335.	0.212	0.014	0.08	0.98	
12/ 2/76	WPB-31.0	1355.	0.194	0.053	0.11	1.05	
12/ 2/76	WPB-31.0	1355.	0.237	0.010	0.10	1.56	
12/ 2/76	WPB-31.0	1355.	0.236	0.006	0.11	1.43	
2/ 9/77	WPB-31.5	1300.	2.954	0.177	2.49	7.52	10.65
2/ 9/77	WPB-31.4	1320.	2.855	0.169	1.61	6.81	9.83
2/ 9/77	WPB-31.4	1320.	2.770	0.169	1.68	6.30	9.24
2/ 9/77	WPB-31.4	1320.	2.840	0.168	1.81	7.43	10.44
2/ 9/77	WPB-31.0	1335.	2.636	0.169	1.62	5.57	8.38
3/ 9/77	WPB-31.4	1310.	0.657	0.006	0.03	3.33	3.99
3/ 9/77	WPB-31.5	1330.	0.540	0.005	0.02	1.58	2.13
3/ 9/77	WPB-31.5	1330.	0.502	0.008	0.03	1.42	1.93
3/ 9/77	WPB-31.5	1330.	0.507	0.005	0.05	1.58	2.09
3/ 9/77	WPB-33.5	1400.	0.553	0.005	0.05	1.49	2.05
4/11/77	WPB-31.4	1330.	0.582	< 0.004	0.02	1.61	2.20
4/11/77	WPB-31.5	1350.	0.684	< 0.004	0.02	1.74	2.43
4/11/77	WPB-33.5	1415.	0.601	< 0.004	0.06	1.74	2.35

APPENDIX B-3 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
6/ 1/76	WPB-31.5	1120.	0.123	0.163	128.2	285.9	7.95
6/ 1/76	WPB-31.4	1150.	0.089	0.130	125.0	261.4	7.83
6/ 1/76	WPB-30.4	1215.	0.084	0.125	119.0	247.2	7.65
6/ 1/76	WPB-29.8	1245.	0.069	0.107	113.9	229.1	7.56
6/17/76	WPB-31.4	1420.	0.164	0.196	182.1	273.8	8.93
6/17/76	WPB-31.5	1320.	0.136	0.193	181.4	279.2	8.99
6/17/76	WPB-33.5	1340.	0.147	0.204	181.1	287.8	9.01
7/ 1/76	WPB-31.5	1540.	0.109	0.155	202.9	218.4	8.14
7/ 1/76	WPB-31.4	1630.					
7/15/76	WPB-31.5	1100.	0.056	0.100	191.7	196.5	7.58
7/15/76	WPB-31.4	1125.	0.058	0.085	190.4	197.3	7.48
7/15/76	WPB-31.6	1150.	0.054	0.087	200.4	196.5	7.58
7/30/76	WPB-31.4	830.	0.021	0.048	119.8	192.7	6.30
7/30/76	WPB-31.5	900.	0.021	0.050	117.8	193.5	6.40
7/30/76	WPB-31.5	900.	0.021	0.054	116.8	191.9	6.47
7/30/76	WPB-31.5	900.	0.021	0.051	114.9	191.9	6.47
7/30/76	WPB-31.6	940.	0.018	0.055	114.9	194.3	6.47
8/12/76	WPB-31.4	1030.	0.041	0.085	278.4	225.8	6.99
8/12/76	WPB-31.5	1100.	0.051	0.088	280.9	229.0	6.48
8/12/76	WPB-31.5	1100.	0.046	0.089	304.0	227.4	7.19
8/12/76	WPB-31.5	1100.	0.045	0.087	316.8	231.4	7.26
8/12/76	WPB-33.5	1130.	0.047	0.077	76.1	231.4	7.19
8/24/76	WPB-31.4	1000.	0.016	0.244	77.8	198.9	7.33
8/24/76	WPB-31.5	1020.	0.015	0.088	81.7	206.9	7.61
8/24/76	WPB-31.5	1020.	0.015		75.9	202.9	7.61
8/24/76	WPB-31.5	1020.	0.018	0.056	69.0	190.9	7.18
8/24/76	WPB-33.5	1040.	0.022	0.069	62.2	194.9	7.68
9/ 9/76	WPB-31.5	1045.	0.099	0.127	142.8	43.6	1.95
9/ 9/76	WPB-31.5	1045.	0.104	0.126	110.5	44.0	2.13
9/ 9/76	WPB-31.5	1045.	0.110	0.126	106.5	44.0	2.13
9/ 9/76	WPB-31.4	1110.	0.219	0.250	84.6	42.2	1.86
9/ 9/76	WPB-31.0	1125.	0.213	0.242	112.5	41.8	1.86
9/21/76	WPB-31.5	1015.	0.049	0.083	95.8	196.7	7.96
9/21/76	WPB-31.4	1025.	0.061	0.077	99.8	202.3	8.18
9/21/76	WPB-31.4	1025.	0.057	0.076	101.8	202.3	8.11
9/21/76	WPB-31.4	1025.	0.058	0.077	102.8	201.5	8.06
9/21/76	WPB-31.6	1045.	0.056	0.085	109.9	209.5	8.11
10/ 6/76	WPB-31.4	1140.	0.023	0.077	468.4	254.5	8.79
10/ 6/76	WPB-31.5	1200.	0.025	0.085	416.8	259.3	8.94
10/ 6/76	WPB-31.5	1200.	0.027	0.084	406.5	253.7	8.72

APPENDIX B-3 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
10/ 6/76	WPH-31.5	1200.	0.025	0.089	530.8	252.1	8.50
10/ 6/76	WPH-33.5	1230.	0.026	0.080	329.0	257.7	8.12
12/ 2/76	WPH-31.5	1315.	0.014	0.025		100.6	3.51
12/ 2/76	WPH-31.4	1335.	0.009	0.027		99.6	3.49
12/ 2/76	WPH-31.6	1355.	0.013	0.026		103.4	4.86
12/ 2/76	WPH-31.6	1355.	0.014	0.038		103.6	4.95
12/ 2/76	WPH-31.6	1355.	0.013	0.040		104.6	5.01
2/ 9/77	WPH-31.5	1300.	0.219	0.389	128.9	289.6	9.29
2/ 9/77	WPH-31.4	1320.	0.195	0.301	138.9	278.7	9.17
2/ 9/77	WPH-31.4	1320.	0.199	0.282	137.9	278.7	9.15
2/ 9/77	WPH-31.4	1320.	0.199	0.297	128.9	275.7	9.07
2/ 9/77	WPH-31.6	1335.	0.169	0.306	136.9	276.3	8.41
3/ 9/77	WPH-31.4	1310.	0.038	0.072	64.4	104.0	2.86
3/ 9/77	WPH-31.5	1330.	0.047	0.074	63.6	104.6	2.86
3/ 9/77	WPH-31.5	1330.	0.042	0.074	63.6	102.8	2.83
3/ 9/77	WPH-31.5	1330.	0.044	0.081	64.2	108.0	2.86
3/ 9/77	WPH-33.5	1400.	0.048	0.079	64.9	104.6	2.87
4/11/77	WPH-31.4	1330.	0.059	0.123	63.3	109.9	2.60
4/11/77	WPH-31.5	1350.	0.054	0.104	61.6	101.0	2.53
4/11/77	WPH-33.5	1415.	0.061	0.124	62.1	102.1	2.53

APPENDIX B-3 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	NA MG/L	K MG/L	CA MG/L	MG MG/L
6/ 1/76	WPB-31.5	1120.	214.25	10.05	125.79	41.06
6/ 1/76	WPB-31.4	1150.	194.69	9.50	125.79	38.70
6/ 1/76	WPB-30.4	1215.	181.65	9.87	127.82	38.32
6/ 1/76	WPB-29.8	1245.	168.62	8.78	123.09	34.15
6/17/76	WPB-31.4	1420.	199.79	11.89	129.82	
6/17/76	WPB-31.5	1320.	201.33	12.60	140.92	
6/17/76	WPB-33.5	1340.	205.95	12.73	135.19	
7/ 1/76	WPB-31.5	1540.	180.56	0.94	135.87	55.90
7/ 1/76	WPB-31.4	1630.				
7/15/76	WPB-31.5	1100.	133.27	0.74	119.47	45.41
7/15/76	WPB-31.4	1125.	129.86	0.73	120.82	46.17
7/15/76	WPB-31.6	1150.	129.34	0.71	122.75	47.70
7/30/76	WPB-31.4	830.	133.55	0.88	113.54	32.36
7/30/76	WPB-31.5	900.	134.52	0.83	100.69	32.36
7/30/76	WPB-31.5	900.	135.16	0.81	97.32	32.53
7/30/76	WPB-31.5	900.	136.93	0.89	93.95	32.27
7/30/76	WPB-31.6	940.	137.09	0.86	94.27	31.72
8/12/76	WPB-31.4	1030.	153.96	8.11	86.83	35.71
8/12/76	WPB-31.5	1100.	154.92	7.91	84.35	34.66
8/12/76	WPB-31.5	1100.	153.96	8.17	86.83	35.29
8/12/76	WPB-31.5	1100.	157.15	8.33	92.41	35.71
8/12/76	WPB-33.5	1130.	157.79	8.12	89.16	34.99
8/24/76	WPB-31.4	1000.	146.03	8.51	114.25	32.03
8/24/76	WPB-31.5	1020.	146.03	8.57	118.65	31.99
8/24/76	WPB-31.5	1020.	141.94	8.54	125.72	30.75
8/24/76	WPB-31.5	1020.	150.28	8.95	122.42	32.07
8/24/76	WPB-33.5	1040.	141.47	8.65	119.75	33.40
9/ 9/76	WPB-31.5	1045.	124.70	8.83	147.31	42.61
9/ 9/76	WPB-31.5	1045.	121.28	8.66	133.07	42.30
9/ 9/76	WPB-31.5	1045.	120.66	8.89	139.95	42.56
9/ 9/76	WPB-31.4	1110.	117.55	9.93	124.60	33.01
9/ 9/76	WPB-31.6	1125.	115.84	9.91	117.00	33.89
9/21/76	WPB-31.5	1015.	128.63	8.29	141.92	37.37
9/21/76	WPB-31.4	1025.	130.61	8.23	131.16	36.69
9/21/76	WPB-31.4	1025.	132.10	8.14	133.77	36.74
9/21/76	WPB-31.4	1025.	130.44	8.33	139.15	37.20
9/21/76	WPB-31.6	1045.	131.77	8.39	135.62	37.37
10/ 6/76	WPB-31.4	1140.	204.64	9.42	122.68	38.56
10/ 6/76	WPB-31.5	1200.	184.95	9.60	127.11	39.71
10/ 6/76	WPB-31.5	1200.	182.01	9.49	124.26	39.88

APPENDIX B-3 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	NA MG/L	K MG/L	CA MG/L	MG MG/L
10/ 6/76	WPB-31.5	1200.	186.25	10.08	124.74	39.92
10/ 6/76	WPB-33.5	1230.	192.77	9.56	122.83	40.95
12/ 2/76	WPB-31.5	1315.	68.31	5.91	49.39	21.68
12/ 2/76	WPB-31.4	1335.	67.16	5.80	50.44	21.80
12/ 2/76	WPB-31.6	1355.	70.19	6.04	49.39	21.80
12/ 2/76	WPB-31.6	1355.	70.33	5.93	50.89	21.80
12/ 2/76	WPB-31.6	1355.	71.34	6.00	48.65	21.80
2/ 9/77	WPB-31.5	1300.	180.88	19.42	133.93	41.28
2/ 9/77	WPB-31.4	1320.	158.47	18.20	132.36	43.47
2/ 9/77	WPB-31.4	1320.	165.62	18.20	128.50	43.26
2/ 9/77	WPB-31.4	1320.	160.37	18.28	132.53	43.04
2/ 9/77	WPB-31.6	1335.	167.35	16.29	131.31	42.19
3/ 9/77	WPB-31.4	1310.	67.46	6.52	51.80	20.61
3/ 9/77	WPB-31.5	1330.	67.14	6.54	50.92	20.40
3/ 9/77	WPB-31.5	1330.	66.99	6.64	51.06	20.48
3/ 9/77	WPB-31.5	1330.	65.89	6.43	49.30	19.85
3/ 9/77	WPB-33.5	1400.	66.04	6.74	53.12	20.27
4/11/77	WPB-31.4	1330.	65.86	4.48	47.38	20.33
4/11/77	WPB-31.5	1350.	66.32	4.36	47.22	20.08
4/11/77	WPB-33.5	1415.	65.40	4.42	47.06	20.29

APPENDIX B-3 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	TURB JTU	COLOR UNITS	CU MICROG/L
6/ 1/76	WPB-31.5	1120.	4.1		1.7
6/ 1/76	WPB-31.4	1150.	9.8		2.5
6/ 1/76	WPB-30.4	1215.	6.5		3.2
6/ 1/76	WPB-29.8	1245.	6.6		1.3
6/17/76	WPB-31.4	1420.	1.8	200.0	0.4
6/17/76	WPB-31.5	1320.	1.7	196.0	0.8
6/17/76	WPB-33.5	1340.	1.6	210.0	0.6
7/ 1/76	WPB-31.5	1540.	10.4	360.0	0.4
7/ 1/76	WPB-31.4	1630.			
7/15/76	WPB-31.5	1100.	4.8	192.0	
7/15/76	WPB-31.4	1125.	3.4	194.0	
7/15/76	WPB-31.0	1150.	4.1	194.0	
7/30/76	WPB-31.4	830.	2.6	155.0	< 0.4
7/30/76	WPB-31.5	900.	3.1	132.0	< 0.4
7/30/76	WPB-31.5	900.	1.8	158.0	1.0
7/30/76	WPB-31.5	900.	3.1	156.0	0.5
7/30/76	WPB-31.0	940.	3.2	150.0	0.4
8/12/76	WPB-31.4	1030.	2.9	396.0	< 0.6
8/12/76	WPB-31.5	1100.	2.4	384.0	< 0.6
8/12/76	WPB-31.5	1100.	2.2	388.0	< 0.6
8/12/76	WPB-31.5	1100.	2.1	383.0	< 0.6
8/12/76	WPB-33.5	1130.	2.1	375.0	< 0.6
8/24/76	WPB-31.4	1000.	1.2	162.0	< 0.6
8/24/76	WPB-31.5	1020.	1.3	209.0	< 0.6
8/24/76	WPB-31.5	1020.	1.4	169.0	< 0.6
8/24/76	WPB-31.5	1020.	1.4	177.0	< 0.6
8/24/76	WPB-33.5	1040.	2.1	207.0	< 0.6
9/ 9/76	WPB-31.5	1045.	3.2	310.0	4.4
9/ 9/76	WPB-31.5	1045.	2.9	289.0	2.6
9/ 9/76	WPB-31.5	1045.	3.4	285.0	< 0.6
9/ 9/76	WPB-31.4	1110.	2.4	306.0	0.6
9/ 9/76	WPB-31.0	1125.	3.0	291.0	1.8
9/21/76	WPB-31.5	1015.	3.6	257.0	< 0.6
9/21/76	WPB-31.4	1025.	3.9	222.0	< 0.6
9/21/76	WPB-31.4	1025.	3.3	212.0	< 0.6
9/21/76	WPB-31.4	1025.	2.4	242.0	< 0.6
9/21/76	WPB-31.0	1045.	2.0	227.0	< 0.6
10/ 6/76	WPB-31.4	1140.	1.7	240.0	1.1
10/ 6/76	WPB-31.5	1200.	1.7	231.0	5.0
10/ 6/76	WPB-31.5	1200.	1.8	255.0	< 0.6

APPENDIX B-3 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	TURB JTU	COLOR UNITS		CU MICROG/L
10/ 6/76	WPB-31.5	1200.	1.9	243.0		1.0
10/ 6/76	WPB-33.5	1230.	1.8	240.0		3.0
12/ 2/76	WPB-31.5	1315.	6.5	43.0	<	0.6
12/ 2/76	WPB-31.4	1335.	6.7	40.0	<	0.6
12/ 2/76	WPB-31.0	1355.	7.2	38.0		3.7
12/ 2/76	WPB-31.0	1355.	6.8	47.0		8.9
12/ 2/76	WPB-31.0	1355.	6.9	47.0		7.1
2/ 9/77	WPB-31.5	1300.	3.0	195.0		3.1
2/ 9/77	WPB-31.4	1320.	2.6	180.0		2.2
2/ 9/77	WPB-31.4	1320.	2.4	170.0		2.5
2/ 9/77	WPB-31.4	1320.	2.4	175.0		0.8
2/ 9/77	WPB-31.0	1335.	2.7	185.0		1.8
3/ 9/77	WPB-31.4	1310.	7.0	48.0		2.3
3/ 9/77	WPB-31.5	1330.	7.0	40.0		3.0
3/ 9/77	WPB-31.5	1330.	4.6	45.0		3.8
3/ 9/77	WPB-31.5	1330.	4.8	49.0		2.7
3/ 9/77	WPB-33.5	1400.	6.4	45.0		6.9
4/11/77	WPB-31.4	1330.	22.0	25.0		3.5
4/11/77	WPB-31.5	1350.	26.0	20.0		4.3
4/11/77	WPB-33.5	1415.	24.9	28.0		4.9

APPENDIX B. ANALYTICAL RESULTS FOR RECEIVING CANAL SITES ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES.

4. CATTLE RANCH # 2

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	UPSTR OR DOWNSTR	DISCHRGE CODE
7/28/76	L06-01.9	930.	1=UP	2=NO
7/28/76	L06-01.9	930.	1=UP	2=NO
7/28/76	L06-01.9	930.	1=UP	2=NO
7/28/76	L06-03.8	1030.	2=	2=NO
7/28/76	L06-03.8	1030.	2=	2=NO
7/28/76	L06-03.8	1030.	2=	2=NO
7/28/76	L06-03.8	1030.	2=	2=NO
8/26/76	L06-01.9	955.	1=UP	2=NO
8/26/76	L06-01.9	955.	1=UP	2=NO
8/26/76	L06-01.9	955.	1=UP	2=NO
8/26/76	L06-03.8	1020.	2=	2=NO
8/26/76	L06-03.8	1020.	2=	2=NO
8/26/76	L06-03.8	1020.	2=	2=NO
8/26/76	L06-03.8	1020.	2=	2=NO
9/22/76	L06-01.9	1030.	1=UP	1=YES
9/22/76	L06-01.9	1030.	1=UP	1=YES
9/22/76	L06-01.9	1030.	1=UP	1=YES
9/22/76	L06-03.8	1110.	2=	1=YES
9/22/76	L06-03.8	1110.	2=	1=YES
9/22/76	L06-03.8	1110.	2=	1=YES
9/22/76	L06-03.8	1110.	2=	1=YES
11/ 9/76	L06-01.9	1345.	2=	2=NO
11/ 9/76	L06-01.9	1345.	2=	2=NO
11/ 9/76	L06-01.9	1345.	2=	2=NO
12/ 1/76	L06-01.9	1220.	2=	2=NO
12/ 1/76	L06-01.9	1220.	2=	2=NO
12/ 1/76	L06-01.9	1220.	2=	2=NO
2/ 8/77	L06-01.9	1430.	1=UP	2=NO
2/ 8/77	L06-01.9	1430.	1=UP	2=NO
2/ 8/77	L06-01.9	1430.	1=UP	2=NO
2/ 8/77	L06-03.8	1510.	2=	2=NO
2/ 8/77	L06-03.8	1510.	2=	2=NO
2/ 8/77	L06-03.8	1510.	2=	2=NO
2/ 8/77	L06-03.8	1510.	2=	2=NO
4/12/77	L06-01.9	1230.	1=UP	2=NO
4/12/77	L06-01.9	1230.	1=UP	2=NO
4/12/77	L06-01.9	1230.	1=UP	2=NO

APPENDIX B. ANALYTICAL RESULTS FOR RECEIVING CANAL SITES ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES.

4. CATTLE RANCH #2

DATE MO/DA/YR	STATION CODE	NO3 MG/L	NO2 MG/L	NH4 MG/L	TKN MG/L	TOTAL N MG/L
7/28/76	L06-01.9	0.683	0.101	1.00	3.64	4.42
7/28/76	L06-02.0	0.689	0.102	0.99	3.64	4.43
7/28/76	L06-02.0	0.704	0.102	0.97	3.71	4.52
7/28/76	L06-02.0	0.703	0.102	0.99	3.67	4.48
7/28/76	L06-03.8	0.772	0.107	0.97	3.53	4.41
8/26/76	L06-01.9		1.839	0.93	5.26	
8/26/76	L06-02.0		1.834	0.99	5.28	
8/26/76	L06-03.8		1.859	1.02	4.75	
9/22/76	L06-01.9		0.098	0.77	3.30	6.36
9/22/76	L06-02.0	0.244	0.088	0.85	3.12	3.45
9/22/76	L06-03.8	0.054	0.015	1.02	2.90	2.97
11/ 9/76	L06-02.0	0.752	0.015	0.35	1.87	2.64
11/ 9/76	L06-01.9	0.125	0.013	0.35	2.07	2.21
12/ 1/76	L06-02.0	0.199	0.015	0.15	1.97	
12/ 1/76	L06-01.9	0.199	0.017	0.14	2.01	
2/ 8/77	L06-01.9	0.785	0.102	0.39	2.70	3.59
2/ 8/77	L06-02.0	0.806	0.096	0.35	3.03	3.93
2/ 8/77	L06-03.8	1.148	0.050	0.18	3.55	4.75
4/12/77	L06-01.9	0.516	0.024	0.19	1.72	2.26
4/12/77	L06-02.0	0.548	0.019	0.19	1.89	2.46

DATE MO/DA/YR	STATION CODE	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
7/28/76	L06-01.9	0.022	0.040	60.7	240.2	9.35
7/28/76	L06-02.0	0.023	0.040	54.8	237.1	9.33
7/28/76	L06-02.0	0.023	0.040	51.8	222.9	8.31
7/28/76	L06-02.0	0.024	0.042	53.8	223.7	8.31
7/28/76	L06-03.8	0.028	0.044	50.8	226.1	8.24
8/26/76	L06-01.9	0.088	0.268	72.9	251.7	9.68
8/26/76	L06-02.0	0.092	0.300	73.7	250.1	9.72
8/26/76	L06-03.8	0.089	0.318	< 5.0	239.1	9.72
9/22/76	L06-01.9	0.017	0.033	23.7	219.2	8.50
9/22/76	L06-02.0	0.014	0.032	22.7	208.8	8.71
9/22/76	L06-03.8	0.024	0.047	< 5.0	180.9	9.07
11/ 9/76	L06-02.0		0.034	29.2	126.2	4.87
11/ 9/76	L06-01.9	0.006	0.028	30.9	124.0	4.58
12/ 1/76	L06-02.0	0.012	0.017		156.8	6.91
12/ 1/76	L06-01.9	0.009	0.023		161.2	7.04
2/ 8/77	L06-01.9		0.044	57.9	275.1	8.27
2/ 8/77	L06-02.0	0.004	0.037	55.9	279.9	8.54
2/ 8/77	L06-03.8	0.048	0.053	56.4	272.6	8.41
4/12/77	L06-01.9	0.028	0.044	52.0	153.3	3.78
4/12/77	L06-02.0	0.022	0.041	52.6	148.9	3.68

APPENDIX B-4 (CONTINUED)

DATE MO/DA/YR	STATION CODE	NA MG/L	K MG/L	CA MG/L	MG MG/L
7/28/76	L06-01.9	158.11	0.90	119.16	36.78
7/28/76	L06-02.0	156.82	0.84	116.11	35.97
7/28/76	L06-02.0	160.36	0.79	111.13	34.40
7/28/76	L06-02.0	154.57	0.81	115.62	36.18
7/28/76	L06-03.8	154.89	0.79	109.20	36.44
8/26/76	L06-01.9	188.54	10.37	128.71	43.79
8/26/76	L06-02.0	170.68	8.96	126.98	43.92
8/26/76	L06-03.8	171.59	13.93	125.88	42.26
9/22/76	L06-01.9	145.96	7.38	109.47	39.06
9/22/76	L06-02.0	148.60	7.17	107.47	38.00
9/22/76	L06-03.8	127.80	6.88	106.55	42.23
11/ 9/76	L06-02.0	89.60	5.42	77.43	26.56
11/ 9/76	L06-01.9	87.31	5.72	77.11	25.90
12/ 1/76	L06-02.0	105.93	6.55	81.52	31.13
12/ 1/76	L06-01.9	107.38	6.56	83.02	31.44
2/ 8/77	L06-01.9	156.08	8.65	106.26	36.15
2/ 8/77	L06-02.0	172.30	8.64	104.16	35.38
2/ 8/77	L06-03.8	170.86	8.89	102.21	36.32
4/12/77	L06-01.9	99.07	5.39	64.42	24.01
4/12/77	L06-02.0	94.94	5.16	63.47	24.22

DATE MO/DA/YR	STATION CODE	TURB JTU	COLOR UNITS		CU MICROG/L
7/28/76	L06-01.9	2.5	201.0		1.4
7/28/76	L06-02.0	2.8	163.0	<	0.4
7/28/76	L06-02.0	3.0	165.0	<	0.4
7/28/76	L06-02.0	3.8	182.0	<	0.4
7/28/76	L06-03.8	1.6	204.0	<	0.4
8/26/76	L06-01.9	1.7	248.0	<	0.6
8/26/76	L06-02.0	1.4	238.0	<	0.6
8/26/76	L06-03.8	1.2	222.0		
9/22/76	L06-01.9	2.4	150.0		1.8
9/22/76	L06-02.0	3.3	141.0	<	0.6
9/22/76	L06-03.8	2.4	121.0	<	0.6
11/ 9/76	L06-02.0	1.2	99.0	<	0.6
11/ 9/76	L06-01.9	1.6	108.0		3.3
12/ 1/76	L06-02.0	0.8	70.0	<	0.6
12/ 1/76	L06-01.9	0.7	71.0	<	0.6
2/ 8/77	L06-01.9	1.2	130.0	<	0.6
2/ 8/77	L06-02.0	1.1	140.0		0.6
2/ 8/77	L06-03.8	1.0	138.0	<	0.6
4/12/77	L06-01.9	1.8	45.0		3.0
4/12/77	L06-02.0	1.5	40.0		4.8

APPENDIX B. ANALYTICAL RESULTS FOR RECEIVING CANAL SITES ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES.

5. VEGETABLE FARM #1

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	UPSTR OR DOWNSTR	DISCHRGE CODE
6/ 1/76	OCN-04.6	1435.	1=UP	1=YES
6/ 1/76	OCN-04.5	1454.	2=DOWN	1=YES
6/ 1/76	OCN-04.2	1511.	2=DOWN	1=YES
6/17/76	OCN-04.5	1100.	1=UP	1=YES
6/17/76	OCN-04.6	1000.	2=DOWN	1=YES
6/17/76	OCN-05.5	1045.	2=DOWN	1=YES
7/ 1/76	OCN-04.6	840.	1=UP	2=NO
7/ 1/76	OCN-04.6	840.	1=UP	2=NO
7/ 1/76	OCN-04.6	840.	1=UP	2=NO
7/ 1/76	OCN-04.5	940.	2=DOWN	2=NO
7/ 1/76	OCN-04.2	1040.	2=DOWN	2=NO
7/15/76	OCN-04.5	1410.	1=UP	2=NO
7/15/76	OCN-04.6	1345.	2=DOWN	2=NO
7/15/76	OCN-05.5	1430.	2=DOWN	2=NO
7/29/76	OCN-04.5	840.	1=UP	1=YES
7/29/76	OCN-04.6	915.	2=DOWN	1=YES
7/29/76	OCN-04.6	915.	2=DOWN	1=YES
7/29/76	OCN-04.6	915.	2=DOWN	1=YES
7/29/76	OCN-05.5	940.	2=DOWN	1=YES
8/12/76	OCN-04.6	1230.	1=UP	1=YES
8/12/76	OCN-04.5	1250.	2=DOWN	1=YES
8/12/76	OCN-04.2	1320.	2=DOWN	1=YES
8/24/76	OCN-04.6	1335.	1=UP	1=YES
8/24/76	OCN-04.5	1350.	2=DOWN	1=YES
8/24/76	OCN-04.2	1400.	2=DOWN	1=YES
9/ 9/76	OCN-04.6	1200.	1=UP	1=YES
9/ 9/76	OCN-04.5	1215.	2=DOWN	1=YES
9/ 9/76	OCN-04.2	1220.	2=DOWN	1=YES
9/21/76	OCN-04.6	1215.	1=UP	2=NO
9/21/76	OCN-04.5	1235.	2=DOWN	2=NO
9/21/76	OCN-04.2	1250.	2=DOWN	2=NO
10/ 6/76	OCN-04.5	1015.	1=UP	2=NO
10/ 6/76	OCN-04.6	1030.	2=DOWN	2=NO
10/ 6/76	OCN-05.5	1050.	2=DOWN	2=NO
11/10/76	OCN-04.5	1030.	1=UP	2=NO
11/10/76	OCN-04.6	1045.	2=DOWN	2=NO
11/10/76	OCN-05.5	1110.	2=DOWN	2=NO
12/ 2/76	OCN-04.6	1015.	1=UP	2=NO
12/ 2/76	OCN-04.5	1030.	2=DOWN	2=NO
12/ 2/76	OCN-04.2	1050.	2=DOWN	2=NO
2/ 9/77	OCN-04.5	1030.	1=UP	2=NO
2/ 9/77	OCN-04.6	1045.	2=DOWN	2=NO
2/ 9/77	OCN-05.5	1105.	2=DOWN	2=NO
3/ 9/77	OCN-04.5	1115.	1=UP	2=NO
3/ 9/77	OCN-04.6	1130.	2=DOWN	2=NO
4/11/77	OCN-04.5	1045.	1=UP	2=NO
4/11/77	OCN-04.6	1105.	2=DOWN	2=NO
4/11/77	OCN-05.5	1130.	2=DOWN	2=NO

APPENDIX B-5 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	NO3 MG/L	NO2 MG/L	NH4 MG/L	TKN MG/L	TOTAL N MG/L
6/ 1/76	UCN-04.6	1435.	1.309	0.171	0.64	4.32	5.80
6/ 1/76	UCN-04.5	1454.	1.031	0.150	0.92	4.43	5.61
6/ 1/76	UCN-04.2	1511.	1.103	0.156	0.78	4.14	5.40
6/17/76	UCN-04.5	1100.	0.794	0.168	0.63	5.10	6.06
6/17/76	UCN-04.6	1000.	0.786	0.141	0.51	3.42	4.35
6/17/76	UCN-05.5	1045.	0.789	0.125	0.39	3.72	4.63
7/ 1/76	UCN-04.6	840.	0.233	0.069	0.81	4.32	4.62
7/ 1/76	UCN-04.6	840.	0.233	0.059	0.80	4.38	4.68
7/ 1/76	UCN-04.6	840.	0.219	0.070	0.94	4.31	4.60
7/ 1/76	UCN-04.5	940.	0.267	0.076	0.88	4.84	5.18
7/ 1/76	UCN-04.2	1040.	0.354	0.081	1.03	4.87	5.31
7/15/76	UCN-04.5	1410.	0.351	0.101	0.98	3.64	4.09
7/15/76	UCN-04.6	1345.	0.396	0.108	0.93	3.97	4.47
7/15/76	UCN-05.5	1430.	0.463	0.112	1.05	4.21	4.79
7/29/76	UCN-04.5	840.	0.398	0.134	1.31	3.89	4.42
7/29/76	UCN-04.6	915.	0.392	0.136	1.32	4.16	4.69
7/29/76	UCN-04.6	915.	0.386	0.134	1.34	4.02	4.54
7/29/76	UCN-04.6	915.	0.404	0.135	1.32	3.96	4.50
7/29/76	UCN-05.5	940.	1.216	0.136	0.61	3.55	4.90
9/12/76	UCN-04.4	1230.	0.885	0.067	0.55	4.02	4.97
8/12/76	UCN-04.5	1250.	0.758	0.110	0.67	4.22	5.09
8/12/76	UCN-04.2	1320.	0.964	0.113	0.74	4.35	5.43
8/24/76	UCN-04.6	1335.		1.541	0.76	5.46	
8/24/76	UCN-04.5	1350.		1.727	1.20	5.46	
8/24/76	UCN-04.2	1400.		1.705	1.02	5.64	
9/ 9/76	UCN-04.6	1200.	6.532	0.199	1.34	6.49	7.83
9/ 9/76	UCN-04.5	1215.	6.205	0.200	1.36	6.49	12.90
9/ 9/76	UCN-04.2	1220.	6.016	0.195	1.41	6.31	12.52
9/21/76	UCN-04.6	1215.	0.340	0.077	0.94	5.82	6.24
9/21/76	UCN-04.5	1235.	0.319	0.081	0.91	5.56	5.96
9/21/76	UCN-04.2	1250.	0.303	0.079	0.98	5.55	5.93
10/ 5/76	UCN-04.5	1015.	0.738	0.042	0.17	1.52	2.30
10/ 6/76	UCN-04.6	1030.	0.788	0.042	0.12	1.37	2.20
10/ 6/76	UCN-05.5	1050.	0.753	0.036	0.05	1.22	2.01
11/10/76	UCN-04.5	1030.	0.946	0.040	0.26	2.12	3.11
11/10/76	UCN-04.6	1045.	0.974	0.039	0.22	2.04	3.05
11/10/76	UCN-05.5	1110.	1.045	0.040	0.22	2.09	3.18
12/ 2/76	UCN-04.6	1015.	0.446	0.033	0.31	1.53	
12/ 2/76	UCN-04.5	1030.	0.379	0.030	0.30	1.76	
12/ 2/76	UCN-04.2	1050.	0.350	0.027	0.23	1.91	
2/ 9/77	UCN-04.5	1030.	< 0.004	0.010	1.76	3.52	3.53
2/ 9/77	UCN-04.6	1045.	0.241	0.134	0.40	3.22	3.60
2/ 9/77	UCN-05.5	1105.	0.796	0.123	0.31	3.59	4.51
3/ 9/77	UCN-04.5	1115.	0.725	0.038	0.17	2.66	3.42
3/ 9/77	UCN-04.6	1130.	0.712	0.038	0.14	2.23	2.98
4/11/77	UCN-04.5	1045.	0.561	< 0.004	0.04	1.33	1.90
4/11/77	UCN-04.6	1105.	0.544	< 0.004	0.03	1.78	2.33
4/11/77	UCN-05.5	1130.	0.534	< 0.004	0.02	1.12	1.66

APPENDIX B-5 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	O-PO4 MG/L	T_PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
6/ 1/76	UCN-04.6	1435.	0.057	0.075	92.3	240.9	8.67
6/ 1/76	UCN-04.5	1454.	0.144	0.203	117.3	320.7	8.77
6/ 1/76	UCN-04.2	1511.	0.088	0.120	106.8	288.3	8.67
6/11/76	UCN-04.5	1100.		0.048	114.8	443.1	8.97
6/11/76	UCN-04.6	1000.	0.027	0.045	120.9	397.9	10.98
6/11/76	UCN-05.5	1045.	0.009	0.042	113.7	419.8	8.97
7/ 1/76	UCN-04.6	840.	0.139	0.183	80.2	330.5	7.76
7/ 1/76	UCN-04.6	840.	0.136	0.178	84.4	340.4	8.03
7/ 1/76	UCN-04.6	840.	0.146	0.173	83.1	344.3	8.07
7/ 1/76	UCN-04.5	940.	0.136	0.185	97.0	383.7	8.34
7/ 1/76	UCN-04.2	1040.	0.134	0.169	118.6	427.0	8.90
7/15/76	UCN-04.5	1410.	0.022	0.042	129.2	370.7	7.28
7/15/76	UCN-04.6	1345.	0.022	0.047	129.4	375.5	7.51
7/15/76	UCN-05.5	1430.	0.027	0.045	148.1	453.0	8.98
7/29/76	UCN-04.5	840.	0.047	0.079	85.3	475.9	9.10
7/29/76	UCN-04.6	915.	0.053	0.093	88.3	478.2	9.17
7/29/76	UCN-04.6	915.	0.053	0.086	90.2	471.1	9.00
7/29/76	UCN-04.6	915.	0.064	0.090	85.3	473.5	9.02
7/29/76	UCN-05.5	940.	0.144	0.172	97.1	355.8	7.73
8/12/76	UCN-04.6	1230.	0.111	0.145	87.1	267.6	9.22
8/12/76	UCN-04.5	1250.	0.137	0.159	109.1	297.4	9.61
8/12/76	UCN-04.2	1320.	0.142	0.191	120.1	299.8	9.05
8/24/76	UCN-04.6	1335.	0.103	0.176	84.6	319.0	10.71
8/24/76	UCN-04.5	1350.	0.121	0.167	90.6	359.0	10.78
8/24/76	UCN-04.2	1400.	0.108	0.161	81.6	375.0	10.80
9/ 9/76	UCN-04.6	1200.	0.220	0.231	104.6	63.8	2.30
9/ 9/76	UCN-04.5	1215.	0.230	0.239	100.6	66.7	2.35
9/ 9/76	UCN-04.2	1220.	0.256	0.266	104.6	71.0	2.35
9/21/76	UCN-04.6	1215.	0.076	0.085	167.5	325.4	11.97
9/21/76	UCN-04.5	1235.	0.083	0.083	160.4	330.2	8.42
9/21/76	UCN-04.2	1250.	0.074	0.083	161.4	332.6	12.26
10/ 6/76	UCN-04.5	1015.	0.032	0.040	561.4	353.7	9.35
10/ 6/76	UCN-04.6	1030.	0.027	0.043	468.4	358.5	9.53
10/ 6/76	UCN-05.5	1050.	0.028	0.040	432.3	274.5	9.29
11/ 3/76	UCN-04.5	1030.	0.056	0.088	78.2	156.6	4.03
11/ 3/76	UCN-04.6	1045.	0.058	0.085	77.9	155.4	4.09
11/ 3/76	UCN-05.5	1110.	0.092	0.094	78.2	159.6	4.06
12/ 2/76	UCN-04.6	1015.	0.017	0.020		172.2	6.53
12/ 2/76	UCN-04.5	1030.	0.020	0.025		126.1	5.49
12/ 2/76	UCN-04.2	1050.	0.019	0.029		150.2	6.04
2/ 9/77	UCN-04.5	1030.	1.794	2.583	38.8	566.5	8.31
2/ 9/77	UCN-04.6	1045.	0.377	0.713	103.4	444.8	10.13
2/ 9/77	UCN-05.5	1105.	0.122	0.200	123.9	420.6	9.54
3/ 9/77	UCN-04.5	1115.	0.057	0.070	68.5	151.5	4.13
3/ 9/77	UCN-04.6	1130.	0.055	0.076	69.3	145.9	4.17
4/11/77	UCN-04.5	1045.	0.053	0.070	62.8	106.6	2.52
4/11/77	UCN-04.6	1105.	0.053	0.067	62.1	106.8	2.53
4/11/77	UCN-05.5	1130.	0.047	0.065	61.6	107.5	2.54

APPENDIX B-5 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	NA MG/L	K MG/L	CA MG/L	MG MG/L
6/ 1/76	UCN-04.6	1435.	196.87	9.92	107.91	49.17
6/ 1/76	UCN-04.5	1454.	250.11	13.43	106.05	
6/ 1/76	UCN-04.2	1511.	226.20	11.14	124.27	50.60
6/17/76	UCN-04.5	1100.	302.91	15.44	128.21	
6/17/76	UCN-04.6	1000.	300.45	17.01	112.11	
6/17/76	UCN-05.5	1045.	289.37	16.32	116.41	
7/ 1/76	UCN-04.6	840.	261.90	1.37	109.58	42.90
7/ 1/76	UCN-04.6	840.	257.59	1.43	111.03	42.90
7/ 1/76	UCN-04.6	840.	248.96	1.32	105.38	42.74
7/ 1/76	UCN-04.5	940.	297.03	1.50	112.32	46.99
7/ 1/76	UCN-04.2	1040.	331.53	1.55	110.70	45.19
7/15/76	UCN-04.5	1410.	280.54	0.90	88.32	36.44
7/15/76	UCN-04.6	1345.	192.11	0.96	91.60	38.82
7/15/76	UCN-05.5	1430.	94.35	0.41	30.34	12.88
7/29/76	UCN-04.5	840.	326.59	1.46	108.72	39.90
7/29/76	UCN-04.6	915.	326.59	1.42	109.84	40.50
7/29/76	UCN-04.6	915.	319.19	1.42	113.38	40.58
7/29/76	UCN-04.6	915.	312.44	1.52	106.31	39.37
7/29/76	UCN-05.5	940.	217.59	1.31	100.05	38.77
8/12/76	UCN-04.6	1230.	201.63	12.18	100.00	52.10
8/12/76	UCN-04.5	1250.	226.90	12.73	103.72	53.20
8/12/76	UCN-04.2	1320.	230.42	12.92	93.19	51.60
8/24/76	UCN-04.6	1335.	247.24	13.03	129.49	54.78
8/24/76	UCN-04.5	1350.	291.73	13.84	128.55	56.99
8/24/76	UCN-04.2	1400.	295.05	19.55	127.14	56.56
9/ 9/76	UCN-04.6	1200.	199.34	12.89	127.95	53.19
9/ 9/76	UCN-04.5	1215.	203.38	13.09	134.03	54.16
9/ 9/76	UCN-04.2	1220.	213.33	13.26	131.95	54.16
9/21/76	UCN-04.6	1215.	236.80	16.05	145.61	64.72
9/21/76	UCN-04.5	1235.	233.49	7.52	147.92	65.14
9/21/76	UCN-04.2	1250.	229.53	7.68	148.07	66.08
10/ 6/76	UCN-04.5	1015.	255.03	9.40	110.49	39.55
10/ 6/76	UCN-04.6	1030.	260.58	9.46	110.01	39.55
10/ 6/76	UCN-05.5	1050.	201.90	8.64	104.62	39.92
11/10/76	UCN-04.5	1030.	106.38	7.27	76.46	24.47
11/10/76	UCN-04.6	1045.	107.60	7.59	75.33	24.01
11/10/76	UCN-05.5	1110.	102.57	7.67	76.62	23.52
12/ 2/76	UCN-04.6	1015.	112.42	7.11	61.80	24.96
12/ 2/76	UCN-04.5	1030.	107.81	7.00	62.10	25.04
12/ 2/76	UCN-04.2	1050.	101.61	6.89	60.00	24.56
2/ 9/77	UCN-04.5	1030.	343.04	48.18	104.49	47.02
2/ 9/77	UCN-04.6	1045.	277.23	24.54	102.54	40.77
2/ 9/77	UCN-05.5	1105.	268.16	17.66	100.26	43.83
3/ 9/77	UCN-04.5	1115.	95.12	7.56	73.38	21.24
3/ 9/77	UCN-04.6	1130.	96.84	7.51	72.79	21.24
4/11/77	UCN-04.5	1045.	65.10	4.54	49.43	20.25
4/11/77	UCN-04.6	1105.	67.39	4.53	49.27	20.42
4/11/77	UCN-05.5	1130.	66.63	4.54	48.80	20.33

APPENDIX B-5 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	TURB JTU	COLOR UNITS		CU MICROG/L
6/ 1/76	UCN-04.6	1435.	6.1			1.9
6/ 1/76	UCN-04.5	1454.	7.8			6.4
6/ 1/76	UCN-04.2	1511.	10.0			6.1
6/17/76	UCN-04.5	1100.	1.4	202.0		0.9
6/17/76	UCN-04.6	1000.	1.3	144.0		1.2
6/17/76	UCN-05.5	1045.	1.3	143.0		0.8
7/ 1/76	UCN-04.6	840.	7.9	207.0		0.6
7/ 1/76	UCN-04.6	840.	6.3	212.0		1.1
7/ 1/76	UCN-04.6	840.	6.7	203.0		0.4
7/ 1/76	UCN-04.5	940.	6.6	208.0	<	0.4
7/ 1/76	UCN-04.2	1040.	7.1	223.0		0.4
7/15/76	UCN-04.5	1410.	2.2	140.0		
7/15/76	UCN-04.6	1345.	2.1	131.0		
7/15/76	UCN-05.5	1430.	2.1	173.0		
7/29/76	UCN-04.5	840.	2.9	138.0	<	0.4
7/29/76	UCN-04.6	915.	2.7	169.0	<	0.4
7/29/76	UCN-04.6	915.	2.2	226.0		0.5
7/29/76	UCN-04.6	915.	2.7	207.0		0.6
7/29/76	UCN-05.5	940.	1.8	212.0		1.0
8/12/76	UCN-04.6	1230.	1.5	452.0	<	0.6
8/12/76	UCN-04.5	1250.	1.3	433.0	<	0.6
8/12/76	UCN-04.2	1320.	1.4	434.0	<	0.6
8/24/76	UCN-04.6	1335.	1.2		<	0.6
8/24/76	UCN-04.5	1350.	1.1		<	0.6
8/24/76	UCN-04.2	1400.	1.6	224.0	<	0.6
9/ 9/76	UCN-04.6	1200.	2.6	301.0		3.9
9/ 9/76	UCN-04.5	1215.	2.8	354.0		0.7
9/ 9/76	UCN-04.2	1220.	3.3	291.0		3.0
9/21/76	UCN-04.6	1215.	5.4	322.0	<	0.6
9/21/76	UCN-04.5	1235.	2.4	304.0	<	0.6
9/21/76	UCN-04.2	1250.	5.3	318.0	<	0.6
10/ 6/76	UCN-04.5	1015.	1.1	170.0		2.2
10/ 6/76	UCN-04.6	1030.	1.2	173.0		3.1
10/ 6/76	UCN-05.5	1050.	1.3	186.0		3.5
11/10/76	UCN-04.5	1030.	2.4	96.0		0.7
11/10/76	UCN-04.6	1045.	2.5	92.0	<	0.6
11/10/76	UCN-05.5	1110.	2.3	95.0	<	0.6
12/ 2/76	UCN-04.6	1015.	2.0	56.0	<	0.6
12/ 2/76	UCN-04.5	1030.	1.7	57.0	<	0.6
12/ 2/76	UCN-04.2	1050.	2.2	60.0		4.0
2/ 9/77	UCN-04.5	1030.	9.1	190.0		0.6
2/ 9/77	UCN-04.6	1045.	1.6	155.0		2.2
2/ 9/77	UCN-05.5	1105.	1.0	170.0		5.8
3/ 9/77	UCN-04.5	1115.	2.1	42.0		6.6
3/ 9/77	UCN-04.6	1130.	2.2	72.0		6.5
4/11/77	UCN-04.5	1045.	3.0	60.0		2.8
4/11/77	UCN-04.6	1105.	3.3	58.0		4.0
4/11/77	UCN-05.5	1130.	2.3	50.0		3.4

APPENDIX B. ANALYTICAL RESULTS FOR RECEIVING CANAL SITES ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES.

6. VEGETABLE FARM #2

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	UPSTR OR DOWNSTR	DISCHRGE CODE
6/15/76	HLS-37.0	1045.	1=UP	2=NO
6/15/76	HLS-37.1	1115.	2=DOWN	2=NO
6/15/76	HLS-38.1	1145.	2=DOWN	2=NO
6/30/76	HLS-37.0	1120.	1=UP	1=YES
6/30/76	HLS-37.1	1200.	2=DOWN	1=YES
6/30/76	HLS-37.1	1200.	2=DOWN	1=YES
6/30/76	HLS-37.1	1200.	2=DOWN	1=YES
7/28/76	HLS-37.0	1200.	1=UP	2=NO
7/28/76	HLS-37.1	1230.	2=DOWN	2=NO
8/26/76	HLS-37.0	1310.	1=UP	2=NO
8/26/76	HLS-37.1	1330.	2=DOWN	2=NO
8/26/76	HLS-37.1	1330.	2=DOWN	2=NO
8/26/76	HLS-37.1	1330.	2=DOWN	2=NO
9/22/76	HLS-37.0	1415.	1=UP	1=YES
9/22/76	HLS-37.1	1430.	2=DOWN	1=YES
9/22/76	HLS-37.1	1430.	2=DOWN	1=YES
9/22/76	HLS-37.1	1430.	2=DOWN	1=YES
11/ 9/76	HLS-37.0	1510.	1=UP	2=NO
11/ 9/76	HLS-37.1	1525.	2=DOWN	2=NO
11/ 9/76	HLS-37.1	1525.	2=DOWN	2=NO
11/ 9/76	HLS-37.1	1525.	2=DOWN	2=NO
11/30/76	HLS-37.0	1330.	1=UP	2=NO
11/30/76	HLS-37.0	1330.	1=UP	2=NO
11/30/76	HLS-37.0	1330.	1=UP	2=NO
11/30/76	HLS-37.1	1355.	2=DOWN	2=NO
2/ 8/77	HLS-37.1	1310.	1=UP	2=NO
2/ 8/77	HLS-37.0	1330.	2=DOWN	2=NO

APPENDIX B-6 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	NO3 MG/L	NO2 MG/L	NH4 MG/L	TKN MG/L	TOTAL N MG/L
6/15/76	HLS-37.0	1045.	0.874	0.112	0.64	3.91	4.90
6/15/76	HLS-37.1	1115.	0.753	0.088	0.53	3.82	4.66
6/15/76	HLS-38.1	1145.	0.641	0.094	0.48	4.10	4.84
6/30/76	HLS-37.0	1120.	0.411	0.033	0.14	4.23	4.67
6/30/76	HLS-37.1	1200.	0.600	0.039	0.20	4.29	4.93
6/30/76	HLS-37.1	1200.	0.442	0.039	0.20	4.32	4.80
6/30/76	HLS-37.1	1200.	0.462	0.039	0.22	4.32	4.82
7/28/76	HLS-37.0	1200.	0.458	0.108	0.74	4.29	4.86
7/28/76	HLS-37.1	1230.	0.483	0.110	0.69	4.27	4.86
8/26/76	HLS-37.0	1310.	0.254	0.105	0.97	5.13	5.49
8/26/76	HLS-37.1	1330.	0.261	0.105	0.97	5.40	5.77
8/26/76	HLS-37.1	1330.	0.228	0.102	0.97	5.26	5.59
8/26/76	HLS-37.1	1330.	0.176	0.105	0.97	5.41	5.69
9/22/76	HLS-37.0	1415.	0.704	0.094	1.03	4.16	4.96
9/22/76	HLS-37.1	1430.	0.167	0.061	0.88	3.86	4.09
9/22/76	HLS-37.1	1430.	0.199	0.013	0.89	3.94	4.15
9/22/76	HLS-37.1	1430.	0.199	0.012	0.86	3.89	4.10
10/ 9/76	HLS-37.0	1510.	0.726	0.046	0.21	2.73	3.50
10/ 9/76	HLS-37.1	1525.	0.600	0.040	0.18	2.51	3.15
10/ 9/76	HLS-37.1	1525.	0.603	0.035	0.18	2.57	3.21
10/ 9/76	HLS-37.1	1525.	0.595	0.036	0.18	2.53	3.16
11/30/76	HLS-37.0	1330.	0.200	0.014	0.12	2.00	
11/30/76	HLS-37.0	1330.	0.201	0.014	0.13	2.02	
11/30/76	HLS-37.0	1330.	0.201	0.015	0.11	2.13	
11/30/76	HLS-37.1	1355.	0.179	0.012	0.12	2.40	
2/ 8/77	HLS-37.1	1310.	1.346	0.065	0.18	3.48	4.89
2/ 8/77	HLS-37.0	1330.	1.597	0.068	0.25	3.06	4.72

APPENDIX B-6 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
6/15/76	HLS-37.0	1045.	0.070		67.1	260.2	9.17
6/15/76	HLS-37.1	1115.	0.058	0.086	67.6	256.3	9.13
6/15/76	HLS-38.1	1145.	0.101	0.097	87.6	248.5	9.56
6/30/76	HLS-37.0	1120.	0.243	0.296	80.7	232.2	7.53
6/30/76	HLS-37.1	1200.	0.200	0.253	66.9	232.2	5.87
6/30/76	HLS-37.1	1200.	0.205	0.257	66.9	236.1	5.98
6/30/76	HLS-37.1	1200.	0.207	0.262	68.9	238.1	5.87
7/28/76	HLS-37.0	1200.	0.103	0.174	75.5	223.7	9.10
7/28/76	HLS-37.1	1230.	0.099	0.172	71.5	225.3	9.10
8/26/76	HLS-37.0	1310.	0.140	0.217	< 5.0	239.1	10.78
8/26/76	HLS-37.1	1330.	0.139	0.195	< 5.0	243.1	10.86
8/26/76	HLS-37.1	1330.	0.142	0.288	9.3	240.7	11.63
8/26/76	HLS-37.1	1330.	0.136	0.303	77.6	243.9	10.91
9/22/76	HLS-37.0	1415.	0.013	0.032	< 5.0	265.4	9.07
9/22/76	HLS-37.1	1430.	0.032	0.059	< 5.0	267.8	9.07
9/22/76	HLS-37.1	1430.	0.037	0.062	< 5.0	267.0	9.00
9/22/76	HLS-37.1	1430.	0.031	0.051	9.0	267.0	9.04
11/ 9/76	HLS-37.0	1510.	0.070	0.105	84.7	165.4	5.51
11/ 9/76	HLS-37.1	1525.	0.063	0.098	82.2	158.4	5.22
11/ 9/76	HLS-37.1	1525.	0.067	0.099	80.2	154.4	4.94
11/ 9/76	HLS-37.1	1525.	0.060	0.096	81.4	156.4	4.96
11/30/76	HLS-37.0	1330.	< 0.002	0.036		112.1	4.90
11/30/76	HLS-37.0	1330.	0.007	0.032		113.1	4.83
11/30/76	HLS-37.0	1330.	< 0.002	0.032		120.1	5.22
11/30/76	HLS-37.1	1355.	< 0.002	0.049		111.0	4.90
2/ 8/77	HLS-37.1	1310.	0.008	0.047	71.5	82.4	9.36
2/ 8/77	HLS-37.0	1330.	0.013	0.048	70.2	266.6	9.18

APPENDIX B-6 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	NA MG/L	K MG/L	CA MG/L	MG MG/L
6/15/76	HLS-37.0	1045.	193.64	11.46	114.44	
6/15/76	HLS-37.1	1115.	198.25	12.27	115.51	
6/15/76	HLS-38.1	1145.	186.56	14.00	126.78	
6/30/76	HLS-37.0	1120.	188.26	1.08	103.45	40.81
6/30/76	HLS-37.1	1200.	189.18	1.08	104.41	42.25
6/30/76	HLS-37.1	1200.	187.64	1.12	108.12	41.77
6/30/76	HLS-37.1	1200.	190.42	1.24	103.77	41.77
7/28/76	HLS-37.0	1200.	158.43	1.16	123.65	44.32
7/28/76	HLS-37.1	1230.	157.79	1.18	123.17	42.88
8/26/76	HLS-37.0	1310.	172.20	13.45	138.45	54.35
8/26/76	HLS-37.1	1330.	171.89	13.07	137.35	54.69
8/26/76	HLS-37.1	1330.	175.53	13.40	128.39	54.18
8/26/76	HLS-37.1	1330.	184.60	14.01	126.04	56.39
9/22/76	HLS-37.0	1415.	185.64	8.92	110.55	40.16
9/22/76	HLS-37.1	1430.	190.59	10.29	112.09	46.73
9/22/76	HLS-37.1	1430.	187.95	10.20	113.47	44.94
9/22/76	HLS-37.1	1430.	183.33	10.16	114.24	47.14
11/ 9/76	HLS-37.0	1510.	111.72	9.97	92.68	35.85
11/ 9/76	HLS-37.1	1525.	105.31	9.57	85.87	34.00
11/ 9/76	HLS-37.1	1525.	107.14	9.85	85.06	33.51
11/ 9/76	HLS-37.1	1525.	105.92	9.59	83.76	32.77
11/30/76	HLS-37.0	1330.	74.08	6.46	56.42	23.94
11/30/76	HLS-37.0	1330.	73.65	6.67	60.60	24.61
11/30/76	HLS-37.0	1330.	75.81	6.67	59.41	24.81
11/30/76	HLS-37.1	1355.	75.66		58.81	24.41
2/ 8/77	HLS-37.1	1310.	147.50	9.30	109.37	42.28
2/ 8/77	HLS-37.0	1330.	150.84	9.40	110.83	41.34

APPENDIX B-6 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	TURB JTU	COLOR UNITS		CU MICROG/L
6/15/76	HLS-37.0	1045.	2.5	139.0		1.3
6/15/76	HLS-37.1	1115.	1.4	226.0		1.4
6/15/76	HLS-38.1	1145.	1.2	222.0		1.1
6/30/76	HLS-37.0	1120.	5.6	214.0		2.5
6/30/76	HLS-37.1	1200.	6.0	203.0		2.8
6/30/76	HLS-37.1	1200.	5.6	225.0		
6/30/76	HLS-37.1	1200.	6.2	226.0		2.5
7/28/76	HLS-37.0	1200.	2.7	236.0		0.5
7/28/76	HLS-37.1	1230.	3.3	286.0		1.0
8/26/76	HLS-37.0	1310.	1.9	269.0	<	0.6
8/26/76	HLS-37.1	1330.	2.0	253.0	<	0.6
8/26/76	HLS-37.1	1330.	1.9	283.0	<	0.6
8/26/76	HLS-37.1	1330.	1.8	269.0	<	0.6
9/22/76	HLS-37.0	1415.	19.0	189.0	<	0.6
9/22/76	HLS-37.1	1430.	5.1	201.0	<	0.6
9/22/76	HLS-37.1	1430.	4.6	183.0	<	0.6
9/22/76	HLS-37.1	1430.	4.2	187.0		
11/ 9/76	HLS-37.0	1510.	3.5	145.0	<	0.6
11/ 9/76	HLS-37.1	1525.	4.0	120.0	<	0.6
11/ 9/76	HLS-37.1	1525.	4.4	121.0		1.3
11/ 9/76	HLS-37.1	1525.	4.8	123.0		0.9
11/30/76	HLS-37.0	1330.	3.4	68.0		2.5
11/30/76	HLS-37.0	1330.	2.8	65.0		0.7
11/30/76	HLS-37.0	1330.	2.7	65.0	<	0.6
11/30/76	HLS-37.1	1355.	3.2	63.0		1.7
2/ 8/77	HLS-37.1	1310.	2.2	175.0	<	0.6
2/ 8/77	HLS-37.0	1330.	1.9	175.0	<	0.6

APPENDIX B. ANALYTICAL RESULTS AND RECEIVING CANAL SITES ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES.

7. VEGETABLE FARM #3

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	UPSTR OR DOWNSTR	DISCHRGE CODE
6/17/76	UCN-00.4	1130.	1=UP	1=YES
6/17/76	UCN-00.5	1200.	2=DOWN	1=YES
6/17/76	UCN-01.1	1215.	2=DOWN	1=YES
7/ 1/76	UCN-00.5	1115.	1=UP	1=YES
7/ 1/76	UCN-00.4	1230.	2=DOWN	1=YES
7/ 1/76	UCN-00.0	1245.	2=DOWN	1=YES
7/29/76	UCN-00.5	1100.	1=UP	1=YES
7/29/76	UCN-00.4	1030.	2=DOWN	1=YES
7/29/76	UCN-00.0	1125.	2=DOWN	1=YES
8/24/76	UCN-00.5	1250.	1=UP	2=NO
8/24/76	UCN-00.4	1300.	2=DOWN	2=NO
8/24/76	UCN-00.0	1310.	2=DOWN	2=NO
9/21/76	UCN-00.5	1310.	1=UP	2=NO
9/21/76	UCN-00.4	1320.	2=DOWN	2=NO
11/10/76	UCN-00.4	1200.	1=UP	2=NO
11/10/76	UCN-00.5	1215.	2=DOWN	2=NO
12/ 2/76	UCN-00.5	1125.	1=UP	2=NO
12/ 2/76	UCN-00.4	1140.	2=DOWN	2=NO
12/ 2/76	UCN-00.0	1200.	2=DOWN	2=NO
2/ 9/77	UCN-00.4	1130.	1=UP	1=YES
2/ 9/77	UCN-00.5	1145.	2=DOWN	1=YES
2/ 9/77	UCN-01.1	1200.	2=DOWN	1=YES
4/11/77	UCN-00.4	1200.	1=UP	2=NO
4/11/77	UCN-00.5	1225.	2=DOWN	2=NO
4/11/77	UCN-01.1	1245.	2=DOWN	2=NO

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	NO3 MG/L	NO2 MG/L	NH4 MG/L	TKN MG/L	TOTAL N MG/L
6/17/76	OCN-00.4	1130.	0.613	0.146	1.43	4.88	5.64
6/17/76	OCN-00.5	1200.	0.608	0.144	1.54	4.88	5.63
6/17/76	OCN-01.1	1215.	0.802	0.166	1.41	4.60	5.57
7/ 1/76	OCN-00.5	1115.	1.144	0.079	0.28	3.56	4.78
7/ 1/76	OCN-00.4	1230.	1.335	0.077	0.23	4.13	5.54
7/ 1/76	OCN-00.0	1245.	0.868	0.078	0.27	4.25	5.20
7/29/76	OCN-00.5	1100.	0.969	0.127	1.16	4.02	5.12
7/29/76	OCN-00.4	1030.	0.452	0.071	0.30	2.53	3.05
7/29/76	OCN-00.0	1125.	0.334	0.052	0.12	1.99	2.38
8/24/76	OCN-00.5	1250.		1.370	1.71	5.17	
8/24/76	OCN-00.4	1300.		1.271	1.54	5.24	
8/24/76	OCN-00.0	1310.		1.248	1.70	5.27	
9/21/76	OCN-00.5	1310.	0.447	0.093	1.12	4.59	5.13
9/21/76	OCN-00.4	1320.	0.510	0.098	1.15	4.92	5.53
11/10/76	OCN-00.4	1200.	0.901	0.030	0.18	2.04	2.97
11/10/76	OCN-00.5	1215.	0.894	0.030	0.18	1.95	2.87
12/ 2/76	OCN-00.5	1125.	0.192	0.018	0.86	2.24	
12/ 2/76	OCN-00.4	1140.	0.162	0.021	0.75	2.19	
12/ 2/76	OCN-00.0	1200.	0.140	0.016	0.08	1.55	
2/ 9/77	OCN-00.4	1130.	1.446	0.176	1.00	4.65	6.27
2/ 9/77	OCN-00.5	1145.	1.155	0.150	1.45	4.89	6.20
2/ 9/77	OCN-01.1	1200.	1.531	0.195	0.82	5.45	7.18
4/11/77	OCN-00.4	1200.	0.584	< 0.004	0.03	1.37	1.96
4/11/77	OCN-00.5	1225.	0.612	< 0.004	0.14	1.34	1.96
4/11/77	OCN-01.1	1245.	0.597	< 0.004	0.03	1.12	1.72

APPENDIX B-7 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
6/17/76	UCN-00.4	1130.	0.079	0.105	130.1	314.9	8.65
6/17/76	UCN-00.5	1200.	0.084	0.100	137.3	356.9	9.05
6/17/76	UCN-01.1	1215.	0.044	0.081	146.5	392.6	9.14
7/ 1/76	UCN-00.5	1115.	0.078	0.096	118.6	419.1	8.34
7/ 1/76	UCN-00.4	1230.	0.067	0.084	120.3	428.9	8.71
7/ 1/76	UCN-00.0	1245.	0.065	0.087	123.5	436.8	8.79
7/29/76	UCN-00.5	1100.	0.113	0.154	112.9	412.2	8.12
7/29/76	UCN-00.4	1030.	0.020	0.067	70.5	207.0	4.32
7/29/76	UCN-00.0	1125.	0.006	0.044	65.6	161.7	4.15
8/24/76	UCN-00.5	1250.	0.135	0.138	51.4	399.1	10.01
8/24/76	UCN-00.4	1300.	0.103	0.157	36.8	403.1	10.01
8/24/76	UCN-00.0	1310.	0.139	0.183	30.0	381.5	9.53
9/21/76	UCN-00.5	1310.	0.067	0.069	98.4	410.5	10.36
9/21/76	UCN-00.4	1320.	0.061	0.070	108.6	413.7	10.50
11/1[illegible]/76	UCN-00.4	1200.	0.064	0.110	82.2	119.4	3.68
11/1[illegible]/76	UCN-00.5	1215.	0.070	0.100	82.9	119.6	3.70
12/ 2/76	UCN-00.5	1125.	0.013	0.030		194.5	6.70
12/ 2/76	UCN-00.4	1140.	0.010	0.030		184.7	6.49
12/ 2/76	UCN-00.0	1200.	0.014	0.084		108.0	5.30
2/ [illegible]/77	UCN-00.4	1130.	0.082	0.187	102.9	321.0	7.86
2/ [illegible]/77	UCN-00.5	1145.	0.094	0.165	96.9	305.9	7.71
2/ [illegible]/77	UCN-01.1	1200.	0.153	0.256	111.9	375.3	7.67
4/11/77	UCN-00.4	1200.	0.061	0.083	62.1	111.3	2.58
4/11/77	UCN-00.5	1225.	0.069	0.094	61.8	111.9	2.66
4/11/77	UCN-01.1	1245.	0.060	0.111	60.4	110.7	2.61

APPENDIX B-7 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	NA MG/L	K MG/L	CA MG/L	MG MG/L
6/17/76	UCN-00.4	1130.	221.65	12.08	109.43	
6/17/76	UCN-00.5	1200.	126.65	7.09	131.44	
6/17/76	UCN-01.1	1215.	274.59	12.98	120.34	
7/ 1/76	UCN-00.5	1115.	340.78	1.55	109.74	45.06
7/ 1/76	UCN-00.4	1230.	347.56	1.37	108.77	47.39
7/ 1/76	UCN-00.6	1245.	347.56	1.54	109.58	47.47
7/29/76	UCN-00.5	1100.	289.61	1.38	107.12	39.48
7/29/76	UCN-00.4	1030.	141.11	0.83	75.81	24.92
7/29/76	UCN-00.6	1125.	107.99	0.69	65.21	22.20
8/24/76	UCN-00.5	1250.	298.69	13.76	122.42	51.37
8/24/76	UCN-00.4	1300.	288.70	13.87	121.16	56.38
8/24/76	UCN-00.6	1310.	305.34	14.35	121.48	50.94
9/21/76	UCN-00.5	1310.	295.22	7.64	123.31	55.17
9/21/76	UCN-00.4	1320.		8.12	123.31	57.21
11/10/76	UCN-00.4	1200.	117.06	7.47	73.22	23.19
11/10/76	UCN-00.5	1215.	82.73	7.17	73.22	23.32
12/ 2/76	UCN-00.5	1125.	130.44	7.40	64.64	26.42
12/ 2/76	UCN-00.4	1140.	123.23	7.18	65.08	25.98
12/ 2/76	UCN-00.6	1200.	77.39	6.27	56.12	22.98
2/ 9/77	UCN-00.4	1130.	195.19	11.29	112.30	34.57
2/ 9/77	UCN-00.5	1145.	210.45	10.86	111.97	32.83
2/ 9/77	UCN-01.1	1200.	234.30	15.06	110.18	40.49
4/11/77	UCN-00.4	1200.	68.16	4.47	48.95	20.46
4/11/77	UCN-00.5	1225.	66.94	4.54	50.53	21.05
4/11/77	UCN-01.1	1245.	67.85	4.61	49.11	20.75

APPENDIX B-7 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	TURB JTU	COLOR UNITS		CU MICROG/L
6/17/76	UCN-00.4	1130.	1.4	227.0		0.7
6/17/76	UCN-00.5	1200.	1.5	198.0		0.5
6/17/76	UCN-01.1	1215.	1.3	156.0		1.0
7/ 1/76	UCN-00.5	1115.	9.8	245.0	<	0.4
7/ 1/76	UCN-00.4	1230.	10.1	248.0		0.5
7/ 1/76	UCN-00.9	1245.	9.8	189.0		0.4
7/29/76	UCN-00.5	1100.	2.8	191.0		0.4
7/29/76	UCN-00.4	1030.	4.6	127.0		0.7
7/29/76	UCN-00.9	1125.	5.7	92.0		0.9
8/24/76	UCN-00.5	1250.	1.2	218.0	<	0.6
8/24/76	UCN-00.4	1300.	1.5	215.0		0.7
8/24/76	UCN-00.9	1310.	2.8	193.0	<	0.6
9/21/76	UCN-00.5	1310.	5.0	226.0	<	0.6
9/21/76	UCN-00.4	1320.	4.3	228.0	<	0.6
11/10/76	UCN-00.4	1200.	4.9	90.0		0.8
11/10/76	UCN-00.5	1215.	4.8	89.0	<	0.6
12/ 2/76	UCN-00.5	1125.	2.8	61.0		2.9
12/ 2/76	UCN-00.4	1140.	2.1	65.0		3.1
12/ 2/76	UCN-00.9	1200.	2.6	59.0		1.3
2/ 9/77	UCN-00.4	1130.	3.2	155.0		3.8
2/ 9/77	UCN-00.5	1145.	3.6	155.0		2.2
2/ 9/77	UCN-01.1	1200.	1.6	145.0		3.0
4/11/77	UCN-00.4	1200.	11.0	83.0		4.3
4/11/77	UCN-00.5	1225.	10.0	79.0		3.4
4/11/77	UCN-01.1	1245.	8.1	31.0		3.3

APPENDIX B. ANALYTICAL RESULTS AND RECEIVING CANAL SITES ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES.

8. L-8 CANAL

DATE MO/DA/YR	STATION CODE	NO3 MG/L	NO2 MG/L	NH4 MG/L	TKN MG/L	TOTAL N MG/L
6/17/76	L08-00.0	0.161	0.014	0.08	1.48	1.66
7/ 1/76	L08-00.0	0.268	0.014	0.07	1.56	1.84
7/15/76	L08-00.0	0.067	0.013	0.08	1.45	1.53
7/29/76	L08-00.0	0.052	0.005	< 0.01	1.32	1.38
8/13/76	L08-00.0	0.310	0.010	0.12	1.45	1.77
8/26/76	L08-00.0	0.174	0.006	< 0.01	1.45	1.63
9/ 9/76	L08-00.0	0.110	0.012	0.09	1.30	
9/21/76	L08-00.0	0.138	0.013	0.09	1.27	1.42
10/ 6/76	L08-00.0	0.231	0.020	0.03	1.40	1.65
11/10/76	L08-00.0	0.379	0.017	0.11	1.88	2.28
12/ 2/76	L08-00.0	0.064	0.008	0.06	2.77	
2/ 9/77	L08-00.0	1.666	0.149	1.11	4.84	6.66
3/ 9/77	L08-00.0	0.557	0.023	0.10	2.09	2.67
4/13/77	L08-00.0			0.03	1.61	2.19

DATE MO/DA/YR	STATION CODE	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
6/17/76	L08-00.0	0.034	0.060	22.3	39.3	2.16
7/ 1/76	L08-00.0	0.029	0.048	41.7	81.9	2.88
7/15/76	L08-00.0	0.015	0.031	49.0	84.3	2.61
7/29/76	L08-00.0	0.003	0.029	61.7	83.9	2.68
8/13/76	L08-00.0	0.036	0.058	98.1	86.7	3.14
8/26/76	L08-00.0	0.005	0.143	29.0	65.2	2.85
9/ 9/76	L08-00.0	0.030	0.050	< 5.0	21.2	1.50
9/21/76	L08-00.0	0.028	0.034	12.6	32.6	1.47
10/ 6/76	L08-00.0	0.021	0.035	561.4	80.1	3.43
11/10/76	L08-00.0	0.065	0.098	78.2	167.0	4.10
12/ 2/76	L08-00.0	0.027	0.038		215.2	6.80
2/ 9/77	L08-00.0	0.103	0.185	128.9	321.0	7.94
3/ 9/77	L08-00.0	0.054	0.062	71.6	132.6	3.67
4/13/77	L08-00.0	0.056	0.084	53.1	110.4	2.69

DATE MO/DA/YR	STATION CODE	NA MG/L	K MG/L	CA MG/L	MG MG/L
6/17/76	L08-00.0				
7/ 1/76	L08-00.0	53.61	0.35	54.57	11.66
7/15/76	L08-00.0	46.20	0.35	42.86	11.48
7/29/76	L08-00.0	51.89	0.51	46.91	14.94
8/13/76	L08-00.0	48.98	2.79	66.53	14.28
8/26/76	L08-00.0	42.81	3.57	61.14	11.58
9/ 9/76	L08-00.0	12.62	1.67	40.14	3.42
9/21/76	L08-00.0	16.08	1.36	37.96	2.83
10/ 6/76	L08-00.0	54.33	2.06	50.29	7.18
11/10/76	L08-00.0	109.99	8.47	73.38	25.37
12/ 2/76	L08-00.0	128.28	9.48	72.85	25.75
2/ 9/77	L08-00.0	216.82	12.19	121.67	34.74
3/ 9/77	L08-00.0	86.32	7.46	63.84	22.09
4/13/77	L08-00.0	71.53	5.26	50.06	20.84

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	NA MG/L	K MG/L	CA MG/L	MG MG/L
6/15/76	HLS-37.0	1045.	193.64	11.46	114.44	
6/15/76	HLS-37.1	1115.	198.25	12.27	115.51	
6/15/76	HLS-38.1	1145.	186.56	14.00	126.78	
6/30/76	HLS-37.0	1120.	188.26	1.08	103.45	40.81
6/30/76	HLS-37.1	1200.	189.18	1.03	104.41	42.23
6/30/76	HLS-37.1	1200.	187.64	1.12	108.12	41.77
6/30/76	HLS-37.1	1200.	190.42	1.24	103.77	41.77
7/28/76	HLS-37.0	1200.	158.43	1.16	123.65	44.32
7/28/76	HLS-37.1	1230.	157.79	1.18	123.17	42.88
8/26/76	HLS-37.0	1310.	172.20	13.45	138.45	54.35
8/26/76	HLS-37.1	1330.	171.89	13.07	137.35	54.69
8/26/76	HLS-37.1	1330.	175.53	13.40	128.39	54.18
8/26/76	HLS-37.1	1330.	184.60	14.01	126.04	56.39
9/22/76	HLS-37.0	1415.	185.64	8.92	110.55	40.16
9/22/76	HLS-37.1	1430.	190.59	10.29	112.09	46.73
9/22/76	HLS-37.1	1430.	187.95	10.20	113.47	44.94
9/22/76	HLS-37.1	1430.	183.33	10.16	114.24	47.14
11/ 9/76	HLS-37.0	1510.	111.72	9.97	92.68	35.85
11/ 9/76	HLS-37.1	1525.	105.31	9.57	85.87	34.00
11/ 9/76	HLS-37.1	1525.	107.14	9.85	85.06	33.51
11/ 9/76	HLS-37.1	1525.	105.92	9.59	83.76	32.77
11/30/76	HLS-37.0	1330.	74.08	6.46	56.42	23.94
11/30/76	HLS-37.0	1330.	73.65	6.67	60.60	24.61
11/30/76	HLS-37.0	1330.	75.81	6.67	59.41	24.81
11/30/76	HLS-37.1	1355.	75.66		58.81	24.41
2/ 8/77	HLS-37.1	1310.	147.50	9.30	109.37	42.28
2/ 8/77	HLS-37.0	1330.	150.84	9.40	110.83	41.34

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	TURB JTU	COLOR UNITS		CU MICROG/L
6/15/76	HLS-37.0	1045.	2.5	139.0		1.3
6/15/76	HLS-37.1	1115.	1.4	226.0		1.4
6/15/76	HLS-38.1	1145.	1.2	222.0		1.1
6/30/76	HLS-37.0	1120.	5.6	214.0		2.5
6/30/76	HLS-37.1	1200.	6.0	203.0		2.8
6/30/76	HLS-37.1	1200.	5.6	225.0		
6/30/76	HLS-37.1	1200.	6.2	226.0		2.5
7/28/76	HLS-37.0	1200.	2.7	236.0		0.5
7/28/76	HLS-37.1	1230.	3.3	286.0		1.0
8/26/76	HLS-37.0	1310.	1.9	269.0	<	0.6
8/26/76	HLS-37.1	1330.	2.0	253.0	<	0.6
8/26/76	HLS-37.1	1330.	1.9	283.0	<	0.6
8/26/76	HLS-37.1	1330.	1.8	269.0	<	0.6
9/22/76	HLS-37.0	1415.	19.0	189.0	<	0.6
9/22/76	HLS-37.1	1430.	5.1	201.0	<	0.6
9/22/76	HLS-37.1	1430.	4.6	183.0	<	0.6
9/22/76	HLS-37.1	1430.	4.2	187.0		
11/ 9/76	HLS-37.0	1510.	3.5	145.0	<	0.6
11/ 9/76	HLS-37.1	1525.	4.0	120.0	<	0.6
11/ 9/76	HLS-37.1	1525.	4.4	121.0		1.3
11/ 9/76	HLS-37.1	1525.	4.8	123.0		0.9
11/30/76	HLS-37.0	1330.	3.4	68.0		2.5
11/30/76	HLS-37.0	1330.	2.8	65.0		0.7
11/30/76	HLS-37.0	1330.	2.7	65.0	<	0.6
11/30/76	HLS-37.1	1355.	3.2	63.0		1.7
2/ 8/77	HLS-37.1	1310.	2.2	175.0	<	0.6
2/ 8/77	HLS-37.0	1330.	1.9	175.0	<	0.6

APPENDIX B. ANALYTICAL RESULTS AND RECEIVING CANAL SITES ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES.

7. VEGETABLE FARM #3

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	UPSTR OR DOWNSTR	DISCHRGE CODE
6/17/76	UCN-00.4	1130.	1=UP	1=YES
6/17/76	UCN-00.5	1200.	2=DOWN	1=YES
6/17/76	UCN-01.1	1215.	2=DOWN	1=YES
7/ 1/76	UCN-00.5	1115.	1=UP	1=YES
7/ 1/76	UCN-00.4	1230.	2=DOWN	1=YES
7/ 1/76	UCN-00.0	1245.	2=DOWN	1=YES
7/29/76	UCN-00.5	1100.	1=UP	1=YES
7/29/76	UCN-00.4	1030.	2=DOWN	1=YES
7/29/76	UCN-00.0	1125.	2=DOWN	1=YES
8/24/76	UCN-00.5	1250.	1=UP	2=NO
8/24/76	UCN-00.4	1300.	2=DOWN	2=NO
8/24/76	UCN-00.0	1310.	2=DOWN	2=NO
9/21/76	UCN-00.5	1310.	1=UP	2=NO
9/21/76	UCN-00.4	1320.	2=DOWN	2=NO
11/10/76	UCN-00.4	1200.	1=UP	2=NO
11/10/76	UCN-00.5	1215.	2=DOWN	2=NO
12/ 2/76	UCN-00.5	1125.	1=UP	2=NO
12/ 2/76	UCN-00.4	1140.	2=DOWN	2=NO
12/ 2/76	UCN-00.0	1200.	2=DOWN	2=NO
2/ 9/77	OCN-00.4	1130.	1=UP	1=YES
2/ 9/77	UCN-00.5	1145.	2=DOWN	1=YES
2/ 9/77	UCN-01.1	1200.	2=DOWN	1=YES
4/11/77	UCN-00.4	1200.	1=UP	2=NO
4/11/77	UCN-00.5	1225.	2=DOWN	2=NO
4/11/77	UCN-01.1	1245.	2=DOWN	2=NO

APPENDIB B-7 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	NO3 MG/L	NO2 MG/L	NH4 MG/L	TKN MG/L	TOTAL N MG/L
6/17/76	UCN-00.4	1130.	0.613	0.146	1.43	4.88	5.64
6/17/76	UCN-00.5	1200.	0.608	0.144	1.54	4.88	5.63
6/17/76	UCN-01.1	1215.	0.802	0.166	1.41	4.60	5.57
7/ 1/76	UCN-00.5	1115.	1.144	0.079	0.28	3.56	4.78
7/ 1/76	UCN-00.4	1230.	1.335	0.077	0.23	4.13	5.54
7/ 1/76	UCN-00.6	1245.	0.868	0.078	0.27	4.25	5.20
7/29/76	UCN-00.5	1100.	0.969	0.127	1.16	4.02	5.12
7/29/76	UCN-00.4	1030.	0.452	0.071	0.30	2.53	3.05
7/29/76	UCN-00.6	1125.	0.334	0.052	0.12	1.99	2.38
8/24/76	UCN-00.5	1250.		1.370	1.71	5.17	
8/24/76	UCN-00.4	1300.		1.271	1.54	5.24	
8/24/76	UCN-00.6	1310.		1.248	1.70	5.27	
9/21/76	UCN-00.5	1310.	0.447	0.093	1.12	4.59	5.13
9/21/76	UCN-00.4	1320.	0.510	0.098	1.15	4.92	5.53
11/10/76	UCN-00.4	1200.	0.901	0.030	0.18	2.04	2.97
11/10/76	UCN-00.5	1215.	0.894	0.030	0.18	1.95	2.87
12/ 2/76	UCN-00.5	1125.	0.192	0.018	0.86	2.24	
12/ 2/76	UCN-00.4	1140.	0.162	0.021	0.75	2.19	
12/ 2/76	UCN-00.6	1200.	0.140	0.016	0.08	1.55	
2/ 9/77	UCN-00.4	1130.	1.446	0.176	1.00	4.65	6.27
2/ 9/77	UCN-00.5	1145.	1.155	0.150	1.45	4.89	6.20
2/ 9/77	UCN-01.1	1200.	1.531	0.195	0.82	5.45	7.18
4/11/77	UCN-00.4	1200.	0.584	< 0.004	0.03	1.37	1.96
4/11/77	UCN-00.5	1225.	0.612	< 0.004	0.14	1.34	1.96
4/11/77	UCN-01.1	1245.	0.597	< 0.004	0.03	1.12	1.72

APPENDIX B-7 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
6/17/76	UCN-00.4	1130.	0.079	0.105	130.1	314.9	8.65
6/17/76	UCN-00.5	1200.	0.084	0.100	137.3	356.9	9.05
6/17/76	UCN-01.1	1215.	0.044	0.081	[illegible]6.5	392.6	9.14
7/ 1/76	UCN-00.5	1115.	0.078	0.096	118.6	419.1	8.34
7/ 1/76	UCN-00.4	1230.	0.067	0.084	120.3	428.9	8.71
7/ 1/76	UCN-00.6	1245.	0.065	0.087	123.5	436.8	8.79
7/29/76	UCN-00.5	1100.	0.113	0.154	112.9	412.2	8.12
7/29/76	UCN-00.4	1030.	0.020	0.067	70.5	207.0	4.32
7/29/76	UCN-00.6	1125.	0.006	0.044	65.6	161.7	4.15
8/24/76	UCN-00.5	1250.	0.135	0.138	51.4	399.1	10.01
8/24/76	UCN-00.4	1300.	0.103	0.157	36.8	403.1	10.01
8/24/76	UCN-00.6	1310.	0.139	0.183	30.0	381.5	9.53
9/21/76	UCN-00.5	1310.	0.067	0.069	98.4	410.5	10.36
9/21/76	UCN-00.4	1320.	0.061	0.070	108.6	413.7	10.50
11/10/76	UCN-00.4	1200.	0.064	0.110	82.2	119.4	3.68
11/10/76	UCN-00.5	1215.	0.070	0.100	82.9	119.6	3.70
12/ 2/76	UCN-00.5	1125.	0.013	0.030		194.5	6.70
12/ 2/76	UCN-00.4	1140.	0.010	0.030		184.7	6.49
12/ 2/76	UCN-00.6	1200.	0.014	0.084		108.0	5.30
2/ 9/77	UCN-00.4	1130.	0.082	0.187	102.9	321.0	7.86
2/ 9/77	UCN-00.5	1145.	0.094	0.165	96.9	305.9	7.71
2/ 9/77	UCN-01.1	1200.	0.153	0.256	111.9	375.3	7.67
4/11/77	UCN-00.4	1200.	0.061	0.083	62.1	111.3	2.58
4/11/77	UCN-00.5	1225.	0.069	0.094	61.8	111.9	2.66
4/11/77	UCN-01.1	1245.	0.060	0.111	60.4	110.7	2.61

APPENDIX B-7 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	NA MG/L	K MG/L	CA MG/L	MG MG/L
6/17/76	UCN-00.4	1130.	221.65	12.08	109.43	
6/17/76	UCN-00.5	1200.	126.65	7.09	131.44	
6/17/76	UCN-01.1	1215.	274.59	12.98	120.34	
7/ 1/76	UCN-00.5	1115.	340.78	1.55	109.74	45.06
7/ 1/76	UCN-00.4	1230.	347.56	1.37	108.77	47.39
7/ 1/76	UCN-00.6	1245.	347.56	1.54	109.58	47.47
7/29/76	UCN-00.5	1100.	289.61	1.38	107.12	39.48
7/29/76	UCN-00.4	1030.	141.11	0.83	75.81	24.92
7/29/76	UCN-00.6	1125.	107.99	0.69	65.21	22.20
8/24/76	UCN-00.5	1250.	298.69	13.76	122.42	51.37
8/24/76	UCN-00.4	1300.	288.70	13.87	121.16	56.38
8/24/76	UCN-00.6	1310.	305.34	14.35	121.48	50.94
9/21/76	UCN-00.5	1310.	295.22	7.64	123.31	55.17
9/21/76	UCN-00.4	1320.		8.12	123.31	57.21
11/10/76	UCN-00.4	1200.	117.06	7.47	73.22	23.19
11/10/76	UCN-00.5	1215.	82.73	7.17	73.22	23.32
12/ 2/76	UCN-00.5	1125.	130.44	7.40	64.64	26.42
12/ 2/76	UCN-00.4	1140.	123.23	7.18	65.08	25.98
12/ 2/76	UCN-00.6	1200.	77.39	6.27	56.12	22.98
2/ 9/77	UCN-00.4	1130.	195.19	11.29	112.30	34.57
2/ 9/77	UCN-00.5	1145.	210.45	10.86	111.97	32.83
2/ 9/77	UCN-01.1	1200.	234.30	15.06	110.18	40.49
4/11/77	UCN-00.4	1200.	68.16	4.47	48.95	20.46
4/11/77	UCN-00.5	1225.	66.94	4.54	50.53	21.05
4/11/77	UCN-01.1	1245.	67.85	4.61	49.11	20.75

APPENDIX B-7 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	TURB JTU	COLOR UNITS	CU MICROG/L
6/17/76	OCN-00.4	1130.	1.4	227.0	0.7
6/17/76	OCN-00.5	1200.	1.5	198.0	0.5
6/17/76	OCN-01.1	1215.	1.3	156.0	1.0
7/ 1/76	OCN-00.5	1115.	9.8	245.0	< 0.4
7/ 1/76	OCN-00.4	1230.	10.1	248.0	0.5
7/ 1/76	OCN-00.0	1245.	9.8	189.0	0.4
7/29/76	OCN-00.5	1100.	2.8	191.0	0.4
7/29/76	OCN-00.4	1030.	4.6	127.0	0.7
7/29/76	OCN-00.0	1125.	5.7	92.0	0.9
8/24/76	OCN-00.5	1250.	1.2	218.0	< 0.6
8/24/76	OCN-00.4	1300.	1.5	215.0	0.7
8/24/76	OCN-00.0	1310.	2.8	193.0	< 0.6
9/21/76	OCN-00.5	1310.	5.0	226.0	< 0.6
9/21/76	OCN-00.4	1320.	4.3	228.0	< 0.6
11/10/76	OCN-00.4	1200.	4.9	90.0	0.8
11/10/76	OCN-00.5	1215.	4.8	89.0	< 0.6
12/ 2/76	OCN-00.5	1125.	2.8	61.0	2.9
12/ 2/76	OCN-00.4	1140.	2.1	65.0	3.1
12/ 2/76	OCN-00.0	1200.	2.6	59.0	1.3
2/ 9/77	OCN-00.4	1130.	3.2	155.0	3.8
2/ 9/77	OCN-00.5	1145.	3.6	155.0	2.2
2/ 9/77	OCN-01.1	1200.	1.6	145.0	3.0
4/11/77	OCN-00.4	1200.	11.0	83.0	4.3
4/11/77	OCN-00.5	1225.	10.0	79.0	3.4
4/11/77	OCN-01.1	1245.	8.1	31.0	3.3

APPENDIX B. ANALYTICAL RESULTS AND RECEIVING CANAL SITES ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES.

8. L-8 CANAL

DATE MO/DA/YR	STATION CODE	NO3 MG/L	NO2 MG/L	NH4 MG/L	TKN MG/L	TOTAL N MG/L
6/17/76	L08-00.0	0.161	0.014	0.08	1.48	1.66
7/ 1/76	L08-00.0	0.268	0.014	0.07	1.58	1.66
7/15/76	L08-00.0	0.067	0.013	0.08	1.45	1.53
7/29/76	L08-00.0	0.052	0.005	< 0.01	1.32	1.38
8/13/76	L08-00.0	0.310	0.010	0.12	1.45	1.77
8/26/76	L08-00.0	0.174	0.006	< 0.01	1.45	1.63
9/ 9/76	L08-00.0	0.110	0.012	0.09	1.30	
9/21/76	L08-00.0	0.138	0.013	0.09	1.27	1.42
10/ 6/76	L08-00.0	0.231	0.020	0.03	1.40	1.65
11/10/76	L08-00.0	0.379	0.017	0.11	1.88	2.28
12/ 2/76	L08-00.0	0.064	0.008	0.06	2.77	
2/ 9/77	L08-00.0	1.666	0.149	1.11	4.84	6.66
3/ 9/77	L08-00.0	0.557	0.023	0.10	2.09	2.67
4/13/77	L08-00.0			0.03	1.61	2.19

APPENDIX B-8 (CONTINUED)

DATE MO/DA/YR	STATION CODE	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
6/17/76	L08-00.0	0.034	0.060	22.3	39.3	2.16
7/ 1/76	L08-00.0	0.029	0.048	41.7	81.9	2.88
7/15/76	L08-00.0	0.015	0.031	49.0	84.3	2.81
7/29/76	L08-00.0	0.003	0.029	61.7	83.9	2.66
8/13/76	L08-00.0	0.036	0.058	98.1	86.7	3.14
8/26/76	L08-00.0	0.005	0.143	29.0	65.2	2.85
9/ 9/76	L08-00.0	0.030	0.050	< 5.0	21.2	1.50
9/21/76	L08-00.0	0.028	0.034	12.6	32.6	1.47
10/ 6/76	L08-00.0	0.021	0.035	561.4	80.1	3.43
11/10/76	L08-00.0	0.065	0.098	78.2	167.0	4.10
12/ 2/76	L08-00.0	0.027	0.038		215.2	6.80
2/ 9/77	L08-00.0	0.103	0.185	128.9	321.0	7.94
3/ 9/77	L08-00.0	0.054	0.062	71.6	132.6	3.67
4/13/77	L08-00.0	0.056	0.084	53.1	110.4	2.69

APPENDIX B-8 (CONTINUED)

DATE MO/DA/YR	STATION CODE	NA MG/L	K MG/L	CA MG/L	MG MG/L
6/17/76	L08-00.0				
7/ 1/76	L08-00.0	53.61	0.35	54.57	11.66
7/15/76	L08-00.0	46.20	0.35	42.86	11.48
7/29/76	L08-00.0	51.89	0.51	46.91	14.94
8/13/76	L08-00.0	48.98	2.79	66.53	14.28
8/26/76	L08-00.0	42.81	3.57	61.14	11.58
9/ 9/76	L08-00.0	12.62	1.67	40.14	3.42
9/21/76	L08-00.0	16.08	1.36	37.96	2.83
10/ 6/76	L08-00.0	54.33	2.06	50.29	7.18
11/10/76	L08-00.0	109.99	8.47	73.38	25.37
12/ 2/76	L08-00.0	128.28	9.48	72.85	25.75
2/ 9/77	L08-00.0	216.82	12.19	121.67	34.74
3/ 9/77	L08-00.0	86.32	7.46	63.84	22.09
4/13/77	L08-00.0	71.53	5.26	50.06	20.84

DATE MO/DA/YR	STATION CODE	TURB JTU	COLOR UNITS	CU MICROG/l
6/17/76	L08-00.0	2.0	130.0	
7/ 1/76	L08-00.0	9.5	218.0	
7/15/76	L08-00.0			
7/29/76	L08-00.0	9.2	67.0	0.4
8/13/76	L08-00.0	11.1	184.0	
8/26/76	L08-00.0	8.6	86.0	
9/ 9/76	L08-00.0	3.3	215.0	
9/21/76	L08-00.0	3.8	169.0	
10/ 6/76	L08-00.0	1.1	143.0	
11/10/76	L08-00.0	4.4	109.0	< 0.6
12/ 2/76	L08-00.0	2.0	153.0	< 0.6
2/ 9/77	L08-00.0	2.1	155.0	3.0
3/ 9/77	L08-00.0	3.1	60.0	2.0
4/13/77	L08-00.0	8.5	17.0	8.8

APPENDIX C

IN SITU MEASUREMENTS FROM PROFILES IN THE RECEIVING CANALS ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES

APPENDIX C. IN SITU MEASUREMENTS FROM PROFILES IN THE RECEIVING CANALS ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES.

1. SUGARCANE FARM #1

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
6/ 4/76	MIA-68.7	1100.	0.0	27.6	5.0	1150.	7.40
6/ 4/76	MIA-68.7	1100.	1.0	27.6	4.9	1150.	7.20
6/ 4/76	MIA-68.7	1100.	2.0	27.5	4.7	1150.	6.85
6/ 4/76	MIA-68.7	1100.	3.0	27.5	4.2	1150.	6.45
6/ 4/76	MIA-68.7	1100.	4.0	27.4	3.8	1150.	6.70
6/ 4/76	MIA-68.7	1100.	5.0	26.5	1.4	1150.	6.21
6/ 4/76	MIA-68.6	1120.	0.0	27.4	5.7	1100.	8.20
6/ 4/76	MIA-68.6	1120.	1.0	27.4	5.7	1100.	8.10
6/ 4/76	MIA-68.6	1120.	2.0	27.3	5.7	1100.	8.00
6/ 4/76	MIA-68.6	1120.	3.0	27.3	5.7	1100.	7.80
6/ 4/76	MIA-68.6	1120.	4.0	27.4	5.7	1100.	7.60
6/ 4/76	MIA-68.6	1120.	5.0	27.2	5.7	1100.	7.45
6/ 4/76	MIA-68.1	1145.	0.0	27.4	5.4	1100.	7.95
6/ 4/76	MIA-68.1	1145.	1.0	27.3	5.3	1100.	8.00
6/ 4/76	MIA-68.1	1145.	2.0	27.1	5.2	1100.	8.20
6/ 4/76	MIA-68.1	1145.	3.0	27.0	5.0	1100.	8.40
6/ 4/76	MIA-68.1	1145.	4.0	26.8	4.6	1100.	8.40
6/ 4/76	MIA-68.1	1145.	5.0	26.5	3.2	1150.	8.40
6/ 4/76	MIA-68.4	1225.	0.0	27.6	5.9	1100.	7.80
6/ 4/76	MIA-68.4	1225.	1.0	27.4	5.6	1100.	7.50
6/ 4/76	MIA-68.4	1225.	2.0	27.0	5.6	1100.	7.30
6/ 4/76	MIA-68.4	1225.	3.0	27.0	5.6	1100.	7.30
6/ 4/76	MIA-68.4	1225.	4.0	27.0	5.6	1100.	7.20
6/ 4/76	MIA-68.4	1225.	5.0	27.0	5.6	1100.	7.70
6/16/76	MIA-68.6	1115.	0.0	26.6	3.2	1100.	7.00
6/16/76	MIA-68.6	1115.	1.0	26.5	3.1	1100.	7.00
6/16/76	MIA-68.6	1115.	2.0	26.5	3.1	1100.	7.00
6/16/76	MIA-68.6	1115.	3.0	26.4	3.1	1150.	7.00
6/16/76	MIA-68.6	1115.	4.0	26.4	3.1	1150.	7.00
6/16/76	MIA-68.6	1130.	5.0	26.4	3.1	1150.	7.00
6/16/76	MIA-68.7	1135.	0.0	26.5	3.1	1100.	7.30
6/16/76	MIA-68.7	1135.	1.0	26.4	3.1	1100.	7.40
6/16/76	MIA-68.7	1135.	2.0	26.4	3.1	1100.	7.40
6/16/76	MIA-68.7	1135.	3.0	26.4	3.1	1100.	7.40
6/16/76	MIA-68.7	1135.	4.0	26.4	3.0	1100.	7.40
6/16/76	MIA-68.7	1155.	5.0	26.4	3.0	1100.	7.40
6/16/76	MIA-69.2	1200.	0.0	26.6	3.0	1100.	7.40
6/16/76	MIA-69.2	1200.	1.0	26.6	3.0	1100.	7.40
6/16/76	MIA-69.2	1200.	2.0	26.6	2.9	1100.	7.40
6/16/76	MIA-69.2	1215.	3.0	26.6	2.9	1100.	7.40
6/16/76	MIA-69.2	1215.	4.0	26.5	2.9	1100.	7.40
6/16/76	MIA-69.2	1215.	5.0	26.5	2.9	1100.	7.40
6/16/76	MIA-70.3	1245.	0.0	27.2	3.3	1150.	7.40
6/16/76	MIA-70.3	1245.	1.0	26.8	3.1	1150.	7.40
6/16/76	MIA-70.3	1245.	2.0	26.7	3.0	1150.	7.30
6/16/76	MIA-70.3	1245.	3.0	26.7	2.9	1150.	7.30
6/16/76	MIA-70.3	1245.	4.0	26.6	2.9	1150.	7.30
6/16/76	MIA-70.3	1245.	5.0	26.6	2.9	1150.	7.30
6/29/76	MIA-68.6	1045.	0.0	29.0	4.5	1200.	6.40
6/29/76	MIA-68.6	1045.	1.0	28.5	3.3	1200.	6.80

APPENDIX C-1 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
6/29/76	MIA-68.6	1045.	2.0	28.0	3.0	1200.	6.90
6/29/76	MIA-68.6	1045.	3.0	28.0	2.9	1200.	7.10
6/29/76	MIA-68.6	1045.	4.0	28.0	2.9	1200.	7.20
6/29/76	MIA-68.6	1045.	5.0	28.0	2.3	1200.	7.30
6/29/76	MIA-68.7	1130.	0.0	29.0	3.9	900.	7.50
6/29/76	MIA-68.7	1130.	0.0	29.0	3.9	900.	7.50
6/29/76	MIA-68.7	1130.	0.0	29.0	3.9	900.	7.50
6/29/76	MIA-68.7	1130.	1.0	28.7	3.6	900.	7.40
6/29/76	MIA-68.7	1130.	2.0	28.0	3.1	950.	7.40
6/29/76	MIA-68.7	1130.	3.0	28.0	3.0	1000.	7.50
6/29/76	MIA-68.7	1130.	4.0	27.8	2.9	1000.	7.40
6/29/76	MIA-68.7	1130.	5.0	27.8	2.6	1050.	7.30
6/29/76	MIA-69.2	1200.	0.0	30.5	4.9	1050.	7.20
6/29/76	MIA-69.2	1200.	1.0	29.0	4.5	1050.	7.30
6/29/76	MIA-69.2	1200.	2.0	28.3	3.6	1100.	7.40
6/29/76	MIA-69.2	1200.	3.0	28.0	2.9	1100.	7.30
6/29/76	MIA-69.2	1200.	4.0	28.0	2.4	1150.	7.30
6/29/76	MIA-69.2	1200.	5.0	27.7	2.0	1200.	7.20
6/29/76	MIA-70.3	1230.	0.0	29.8	5.4	1200.	7.10
6/29/76	MIA-70.3	1230.	1.0	28.4	3.7	1200.	7.20
6/29/76	MIA-70.3	1230.	2.0	28.3	3.5	1200.	7.20
6/29/76	MIA-70.3	1230.	3.0	28.0	3.1	1250.	7.20
6/29/76	MIA-70.3	1230.	4.0	27.6	2.4	1250.	7.10
6/29/76	MIA-70.3	1230.	5.0	27.6	1.9	1250.	7.10
7/14/76	MIA-68.7	1230.	0.0	31.0	3.3	1050.	7.40
7/14/76	MIA-68.7	1230.	1.0	29.8	2.8	1050.	7.60
7/14/76	MIA-68.7	1230.	2.0	29.2	2.5	1100.	7.60
7/14/76	MIA-68.7	1230.	3.0	29.0	2.4	1100.	7.60
7/14/76	MIA-68.7	1230.	4.0	28.8	2.3	1050.	7.60
7/14/76	MIA-68.7	1230.	5.0	28.8	2.3	1100.	7.60
7/14/76	MIA-68.6	1130.	0.0	30.3	3.1	1000.	6.50
7/14/76	MIA-68.6	1130.	1.0	29.5	2.9	1000.	6.90
7/14/76	MIA-68.6	1130.	2.0	29.2	2.5	1000.	7.00
7/14/76	MIA-68.6	1130.	3.0	29.0	2.4	1000.	7.20
7/14/76	MIA-68.6	1130.	4.0	29.0	2.4	1050.	7.30
7/14/76	MIA-68.6	1130.	5.0	29.0	2.4	1050.	7.40
7/14/76	MIA-68.1	1200.	0.0	31.0	2.9	510.	7.40
7/14/76	MIA-68.1	1200.	1.0	29.7	2.5	470.	7.60
7/14/76	MIA-68.1	1200.	2.0	29.0	2.2	560.	7.60
7/14/76	MIA-68.1	1200.	3.0	28.9	2.2	610.	7.70
7/14/76	MIA-68.1	1200.	4.0	28.8	2.1	660.	7.70
7/14/76	MIA-68.1	1200.	5.0	28.7	1.8	690.	7.60
7/27/76	MIA-68.7	1300.	0.0	31.2	7.7	1200.	7.80
7/27/76	MIA-68.7	1300.	0.0	31.2	7.7	1200.	7.80
7/27/76	MIA-68.7	1300.	0.0	31.2	7.7	1200.	7.80
7/27/76	MIA-68.7	1300.	1.0	30.5	6.6	1200.	7.70
7/27/76	MIA-68.7	1300.	2.0	30.0	4.1	1200.	7.60
7/27/76	MIA-68.7	1300.	3.0	29.7	2.4	1250.	7.50
7/27/76	MIA-68.7	1300.	4.0	29.6	1.7	1300.	7.50
7/27/76	MIA-68.7	1300.	5.0	29.5	1.3	1300.	7.40

APPENDIX C-1 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
7/21/76	MIA-68.1	1215.	0.0	31.4	9.6	1000.	7.80
7/21/76	MIA-68.1	1215.	1.0	30.3	5.9	1000.	7.80
7/21/76	MIA-68.1	1215.	2.0	30.1	4.6	1050.	7.70
7/21/76	MIA-68.1	1215.	3.0	29.7	2.4	1100.	7.60
7/21/76	MIA-68.1	1215.	4.0	29.5	1.6	1150.	7.60
7/21/76	MIA-68.1	1215.	5.0	29.5	1.8	1200.	7.70
7/21/76	MIA-68.6	1240.	0.0	31.4	7.7	1000.	7.80
7/21/76	MIA-68.6	1240.	1.0	30.5	5.9	900.	7.80
7/21/76	MIA-68.6	1240.	2.0	30.2	4.1	1000.	7.70
7/21/76	MIA-68.6	1240.	3.0	29.9	2.7	1000.	7.60
7/21/76	MIA-68.6	1240.	4.0	29.7	1.4	1050.	7.60
7/21/76	MIA-68.6	1240.	5.0	29.5	1.3	1100.	7.50
8/11/76	MIA-68.7	1130.	0.0	27.5	3.2	1150.	7.30
8/11/76	MIA-68.7	1130.	1.0	27.5	2.9	1200.	7.30
8/11/76	MIA-68.7	1130.	2.0	27.5	2.5	1200.	7.20
8/11/76	MIA-68.7	1130.	3.0	27.5	2.5	1200.	7.20
8/11/76	MIA-68.7	1130.	4.0	27.0	2.5	1200.	7.20
8/11/76	MIA-68.7	1130.	5.0	27.0	2.5	1200.	7.20
8/11/76	MIA-68.6	1200.	0.0	28.5	3.3	1200.	7.30
8/11/76	MIA-68.6	1200.	0.0	28.5	3.3	1200.	7.30
8/11/76	MIA-68.6	1200.	0.0	28.5	3.3	1200.	7.30
8/11/76	MIA-68.6	1200.	1.0	28.5	3.0	1200.	7.30
8/11/76	MIA-68.6	1200.	2.0	28.0	2.6	1200.	7.20
8/11/76	MIA-68.6	1200.	3.0	28.0	2.6	1250.	7.20
8/11/76	MIA-68.6	1200.	4.0	27.5	2.6	1250.	7.20
8/11/76	MIA-68.6	1200.	5.0	27.5	2.6	1250.	7.20
8/11/76	MIA-68.1	1230.	0.0	29.0	3.4	1200.	7.20
8/11/76	MIA-68.1	1230.	1.0	28.0	2.7	1200.	7.20
8/11/76	MIA-68.1	1230.	2.0	28.0	2.7	1250.	7.20
8/11/76	MIA-68.1	1230.	3.0	27.5	2.6	1250.	7.20
8/11/76	MIA-68.1	1230.	4.0	27.5	2.6	1250.	7.20
8/11/76	MIA-68.1	1230.	5.0	27.5	2.6	1250.	7.20
9/ 8/76	MIA-68.7	1330.	0.0	29.2	4.1	800.	6.90
9/ 8/76	MIA-68.7	1330.	1.0	28.7	4.1	820.	6.80
9/ 8/76	MIA-68.7	1330.	2.0	27.9	3.4	810.	6.80
9/ 8/76	MIA-68.7	1330.	3.0	27.7	3.3	850.	6.80
9/ 8/76	MIA-68.7	1330.	4.0	27.7	3.3	890.	6.80
9/ 8/76	MIA-68.7	1330.	5.0	27.7	3.3	920.	6.80
9/ 8/76	MIA-68.6	1400.	0.0	29.3	4.1	1150.	6.80
9/ 8/76	MIA-68.6	1400.	0.0	29.3	4.1	1150.	6.80
9/ 8/76	MIA-68.6	1400.	0.0	29.3	4.1	1150.	6.80
9/ 8/76	MIA-68.6	1400.	1.0	28.7	3.9	1150.	6.80
9/ 8/76	MIA-68.6	1400.	2.0	27.9	3.2	1150.	6.80
9/ 8/76	MIA-68.6	1400.	3.0	27.8	3.1	1150.	6.80
9/ 8/76	MIA-68.6	1400.	4.0	27.7	3.1	1200.	6.80
9/ 8/76	MIA-68.6	1400.	5.0	27.7	3.1	1200.	6.80
9/ 8/76	MIA-68.1	1420.	0.0	28.4	3.4	1100.	6.80
9/ 8/76	MIA-68.1	1420.	1.0	28.3	3.4	1100.	6.90
9/ 8/76	MIA-68.1	1420.	2.0	28.1	3.2	1100.	6.90
9/ 8/76	MIA-68.1	1420.	3.0	27.8	3.2	1150.	6.90

APPENDIX C-1 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
9/ 8/76	MIA-68.1	1420.	4.0	27.7	2.9	1150.	6.90
9/ 8/76	MIA-68.1	1420.	5.0	27.6	2.9	1150.	6.90
9/23/76	MIA-68.7	1140.	0.0	27.7	4.8	1200.	6.50
9/23/76	MIA-68.7	1140.	1.0	26.7	4.4	1200.	6.30
9/23/76	MIA-68.7	1140.	2.0	26.6	4.3	1200.	6.30
9/23/76	MIA-68.7	1140.	3.0	26.3	1.5	1250.	6.10
9/23/76	MIA-68.7	1140.	4.0	26.1	1.4	1250.	6.10
9/23/76	MIA-68.7	1140.	5.0	26.0	1.2	1250.	6.20
9/23/76	MIA-68.6	1200.	0.0	27.1	5.2	1200.	7.00
9/23/76	MIA-68.6	1200.	0.0	27.1	5.2	1200.	7.00
9/23/76	MIA-68.6	1200.	0.0	27.1	5.2	1200.	7.00
9/23/76	MIA-68.6	1200.	1.0	26.8	4.6	1200.	7.00
9/23/76	MIA-68.6	1200.	2.0	26.5	4.3	1200.	
9/23/76	MIA-68.6	1200.	3.0	26.1	2.1	1250.	
9/23/76	MIA-68.6	1200.	4.0	26.0	2.0	1200.	
9/23/76	MIA-68.6	1200.	5.0	26.0	1.3	1200.	
9/23/76	MIA-68.1	1230.	0.0	27.6	4.9	1200.	
9/23/76	MIA-68.1	1230.	1.0	26.7	4.8	1200.	
9/23/76	MIA-68.1	1230.	2.0	26.5	4.1	1200.	
9/23/76	MIA-68.1	1230.	3.0	26.1	1.4	1250.	
9/23/76	MIA-68.1	1230.	4.0	26.1	1.4	1250.	[illegible]
9/23/76	MIA-68.1	1230.	5.0	25.9	1.2	1250.	6
10/ 5/76	MIA-68.7	1300.	0.0	27.7	4.1	950.	7
10/ 5/76	MIA-68.7	1300.	1.0	26.4	3.3	950.	7
10/ 5/76	MIA-68.7	1300.	2.0	25.8	2.9	950.	7
10/ 5/76	MIA-68.7	1300.	3.0	25.7	2.4	950.	7
10/ 5/76	MIA-68.7	1300.	4.0	25.7	2.0	950.	7.
10/ 5/76	MIA-68.7	1300.	5.0	25.6	1.8	950.	7.
10/ 5/76	MIA-68.6	1320.	0.0	28.0	4.4	800.	7.
10/ 5/76	MIA-68.6	1320.	0.0	28.0	4.4	800.	7.
10/ 5/76	MIA-68.6	1320.	0.0	28.0	4.4	800.	7.2
10/ 5/76	MIA-68.6	1320.	1.0	26.5	3.1	850.	7.2
10/ 5/76	MIA-68.6	1320.	2.0	26.0	2.5	850.	7.20
10/ 5/76	MIA-68.6	1320.	3.0	26.0	2.4	850.	7.10
10/ 5/76	MIA-68.6	1320.	4.0	25.8	2.1	850.	7.10
10/ 5/76	MIA-68.6	1320.	5.0	25.7	2.1	900.	7.10
10/ 5/76	MIA-68.1	1340.	0.0	28.6	4.0	900.	7.30
10/ 5/76	MIA-68.1	1340.	1.0	26.4	3.3	900.	7.20
10/ 5/76	MIA-68.1	1340.	2.0	26.0	2.8	900.	7.20
10/ 5/76	MIA-68.1	1340.	3.0	25.7	2.4	900.	7.20
10/ 5/76	MIA-68.1	1340.	4.0	25.7	2.5	900.	7.20
10/ 5/76	MIA-68.1	1340.	5.0	25.7	2.4	900.	7.20
11/ 9/76	MIA-68.7	1040.	0.0	18.5	7.7	800.	7.90
11/ 9/76	MIA-68.7	1040.	1.0	18.5	7.7	820.	7.90
11/ 9/76	MIA-68.7	1040.	2.0	18.5	7.7	820.	7.90
11/ 9/76	MIA-68.7	1040.	3.0	18.5	7.7	820.	7.90
11/ 9/76	MIA-68.7	1040.	4.0	18.4	7.6	820.	7.90
11/ 9/76	MIA-68.7	1040.	5.0	18.4	7.6	820.	7.90
11/ 9/76	MIA-68.6	1055.	0.0	18.6	7.6	800.	7.90
11/ 9/76	MIA-68.6	1055.	1.0	18.5	7.6	800.	7.90

APPENDIX C-1 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
11/ 9/76	MIA-68.6	1055.	2.0	18.5	7.6	810.	7.90
11/ 9/76	MIA-68.6	1055.	3.0	18.5	7.6	810.	7.90
11/ 9/76	MIA-68.6	1055.	4.0	18.5	7.6	810.	7.90
11/ 9/76	MIA-68.6	1055.	5.0	18.4	7.6	810.	7.90
11/ 9/76	MIA-68.1	1105.	0.0	18.7	7.7	790.	7.90
11/ 9/76	MIA-68.1	1105.	1.0	18.7	7.7	800.	7.90
11/ 9/76	MIA-68.1	1105.	2.0	18.6	7.7	800.	7.90
11/ 9/76	MIA-68.1	1105.	3.0	18.5	7.6	800.	7.90
11/ 9/76	MIA-68.1	1105.	4.0	18.5	7.6	800.	7.90
11/30/76	MIA-68.7	1115.	0.0	20.6	7.3	660.	7.90
11/30/76	MIA-68.7	1115.	1.0	20.4	7.1	660.	7.90
11/30/76	MIA-68.7	1115.	2.0	20.4	6.9	660.	7.90
11/30/76	MIA-68.7	1115.	3.0	20.4	6.8	660.	7.90
11/30/76	MIA-68.7	1115.	4.0	20.4	6.6	660.	7.90
11/30/76	MIA-68.6	1135.	0.0	20.4	7.1	700.	7.90
11/30/76	MIA-68.6	1135.	1.0	20.4	6.9	700.	7.90
11/30/76	MIA-68.6	1135.	2.0	20.4	6.5	700.	7.90
11/30/76	MIA-68.6	1135.	3.0	20.3	5.9	700.	7.90
11/30/76	MIA-68.6	1135.	4.0	20.2	5.1	700.	7.80
11/30/76	MIA-68.1	1155.	0.0	20.3	6.9	680.	7.90
11/30/76	MIA-68.1	1155.	1.0	20.3	6.8	680.	7.90
11/30/76	MIA-68.1	1155.	2.0	20.3	6.7	680.	7.90
11/30/76	MIA-68.1	1155.	3.0	20.3	6.6	680.	7.90
11/30/76	MIA-68.1	1155.	4.0	20.3	6.6	680.	7.90
11/30/76	MIA-68.1	1155.	5.0	20.3	6.6	680.	7.90
2/ 8/77	MIA-68.7	1040.	0.0	16.9		970.	8.10
2/ 8/77	MIA-68.7	1040.	1.0	16.9		980.	8.10
2/ 8/77	MIA-68.7	1040.	2.0	16.9		980.	8.10
2/ 8/77	MIA-68.7	1040.	3.0	16.9		980.	8.10
2/ 8/77	MIA-68.7	1040.	4.0	16.8		980.	8.10
2/ 8/77	MIA-68.7	1040.	5.0	16.8		980.	8.10
2/ 8/77	MIA-68.6	1100.	0.0	16.6		960.	8.10
2/ 8/77	MIA-68.6	1100.	0.0	16.6		960.	8.10
2/ 8/77	MIA-68.6	1100.	0.0	16.6		960.	8.10
2/ 8/77	MIA-68.6	1100.	1.0	16.6		960.	8.10
2/ 8/77	MIA-68.6	1100.	2.0	16.6		960.	8.10
2/ 8/77	MIA-68.6	1100.	3.0	16.6		960.	8.10
2/ 8/77	MIA-68.6	1100.	4.0	16.6		960.	8.00
2/ 8/77	MIA-68.6	1100.	5.0	16.6		960.	8.00
2/ 8/77	MIA-68.1	1120.	0.0	17.0		990.	8.00

APPENDIX C-1 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
2/ 8/77	MIA-68.1	1120.	1.0	17.0		1000.	8.00
2/ 8/77	MIA-68.1	1120.	2.0	17.0		1010.	8.00
2/ 8/77	MIA-68.1	1120.	3.0	16.9		1020.	7.90
2/ 8/77	MIA-68.1	1120.	4.0	16.9		1030.	7.90
2/ 8/77	MIA-68.1	1120.	5.0	16.9		1040.	7.90
3/ 8/77	MIA-68.7	1245.	0.0	21.6	7.4	790.	8.00
3/ 8/77	MIA-68.7	1245.	1.0	21.6	7.3	790.	8.00
3/ 8/77	MIA-68.7	1245.	2.0	21.6	7.3	790.	8.00
3/ 8/77	MIA-68.7	1245.	3.0	21.6	7.3	790.	8.00
3/ 8/77	MIA-68.7	1245.	4.0	21.6	7.3	790.	8.00
3/ 8/77	MIA-68.7	1245.	5.0	21.6	7.3	790.	8.00
3/ 8/77	MIA-68.6	1300.	0.0	21.6	7.3	780.	8.00
3/ 8/77	MIA-68.6	1300.	0.0	21.6	7.3	780.	8.00
3/ 8/77	MIA-68.6	1300.	0.0	21.6	7.3	780.	8.00
3/ 8/77	MIA-68.6	1300.	1.0	21.6	7.3	780.	8.00
3/ 8/77	MIA-68.6	1300.	2.0	21.6	7.3	780.	8.00
3/ 8/77	MIA-68.6	1300.	3.0	21.6	7.3	780.	8.00
3/ 8/77	MIA-68.6	1300.	4.0	21.6	7.3	780.	8.00
3/ 8/77	MIA-68.6	1300.	5.0	21.6	7.3	780.	8.00
3/ 8/77	MIA-68.1	1320.	0.0	21.7	7.3	790.	8.00
3/ 8/77	MIA-68.1	1320.	1.0	21.7	7.5	780.	8.00
3/ 8/77	MIA-68.1	1320.	2.0	21.7	7.5	780.	8.00
3/ 8/77	MIA-68.1	1320.	3.0	21.7	7.5	770.	8.00
3/ 8/77	MIA-68.1	1320.	4.0	21.7	7.5	770.	8.00
3/ 8/77	MIA-68.1	1320.	5.0	21.7	7.5	770.	8.00
4/12/77	MIA-68.7	1500.	0.0	22.9	8.3	730.	8.50
4/12/77	MIA-68.7	1500.	1.0	22.9	8.2	730.	8.50
4/12/77	MIA-68.7	1500.	2.0	22.8	8.1	730.	8.50
4/12/77	MIA-68.7	1500.	3.0	22.8	8.0	730.	8.50
4/12/77	MIA-68.7	1500.	4.0	22.8	7.9	730.	8.40
4/12/77	MIA-68.7	1500.	5.0	22.7	7.5	740.	8.40
4/12/77	MIA-68.6	1520.	0.0	22.5	8.5	750.	
4/12/77	MIA-68.6	1520.	1.0	22.5	8.4	750.	8.40
4/12/77	MIA-68.6	1520.	2.0	22.5	8.4	750.	8.40
4/12/77	MIA-68.6	1520.	3.0	22.5	8.4	750.	8.30
4/12/77	MIA-68.6	1520.	4.0	22.4	8.4	750.	8.40
4/12/77	MIA-68.6	1520.	5.0	22.4	8.2	750.	8.40
4/12/77	MIA-68.1	1540.	0.0	22.5	8.4	750.	8.20
4/12/77	MIA-68.1	1540.	1.0	22.4	8.4	750.	8.20
4/12/77	MIA-68.1	1540.	2.0	22.4	8.3	760.	8.30
4/12/77	MIA-68.1	1540.	3.0	22.4	8.3	760.	8.30
4/12/77	MIA-68.1	1540.	4.0	22.4	8.3	760.	8.30
4/12/77	MIA-68.1	1540.	5.0	22.4	8.3	760.	8.30

APPENDIX C. IN SITU MEASUREMENTS FROM PROFILES IN THE RECEIVING CANALS ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES.

2. SUGARCANE FARM #2

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
6/11/76	WPB-25.4	1505.	0.0	29.7	6.2	1650.	7.15
6/11/76	WPB-25.4	1505.	1.0	28.7	4.6	1650.	7.10
6/11/76	WPB-25.4	1505.	2.0	27.0	1.9	1700.	7.00
6/11/76	WPB-25.4	1505.	3.0	26.6	1.7	1700.	7.00
6/11/76	WPB-25.4	1505.	4.0	26.6	1.6	1750.	7.00
6/11/76	WPB-25.4	1505.	5.0	26.5	1.4	1750.	7.00
6/11/76	WPB-25.4	1505.	6.0	26.3	1.0	1800.	7.00
6/11/76	WPB-25.5	1520.	0.0	28.5	3.1	1700.	7.10
6/11/76	WPB-25.5	1520.	1.0	27.5	2.2	1700.	7.10
6/11/76	WPB-25.5	1520.	2.0	27.0	1.8	1700.	7.20
6/11/76	WPB-25.5	1520.	3.0	26.5	1.9	1750.	7.20
6/11/76	WPB-25.5	1520.	4.0	26.5	1.9	1750.	7.20
6/11/76	WPB-25.5	1520.	5.0	26.5	1.8	1800.	7.20
6/11/76	WPB-25.5	1520.	6.0	26.0	0.9	1800.	7.15
7/ 1/76	WPB-25.5	1400.	0.0	28.9	0.9	1000.	7.00
7/ 1/76	WPB-25.5	1400.	1.0	28.8	0.8	1050.	7.00
7/ 1/76	WPB-25.5	1400.	2.0	28.8	0.7	1100.	7.00
7/ 1/76	WPB-25.5	1400.	3.0	28.7	0.7	1200.	7.00
7/ 1/76	WPB-25.5	1400.	4.0	28.7	0.7	1300.	7.00
7/ 1/76	WPB-25.5	1400.	5.0	28.7	0.7	1300.	7.00
7/ 1/76	WPB-25.4	1430.	0.0	29.0	0.8	1650.	7.00
7/ 1/76	WPB-25.4	1430.	1.0	28.8	0.7	1700.	7.00
7/ 1/76	WPB-25.4	1430.	2.0	28.7	0.7	1700.	7.00
7/ 1/76	WPB-25.4	1430.	3.0	28.7	0.8	1600.	7.00
7/ 1/76	WPB-25.4	1430.	4.0	28.7	0.8	1650.	7.00
7/ 1/76	WPB-25.4	1430.	5.0	28.6	0.8	1650.	7.00
7/ 1/76	WPB-24.9	1500.	0.0	28.9	1.0	1600.	7.00
7/ 1/76	WPB-24.9	1500.	1.0	28.8	0.8	1600.	7.00
7/ 1/76	WPB-24.9	1500.	2.0	28.8	0.8	1600.	7.00
7/ 1/76	WPB-24.9	1500.	3.0	28.8	0.8	1650.	7.00
7/ 1/76	WPB-24.9	1500.	4.0	28.8	0.8	1650.	7.00
7/ 1/76	WPB-24.9	1500.	5.0	28.8	0.8	1650.	7.00
7/ 1/76	WPB-24.9	1500.	6.0	28.8	0.7	1700.	7.00
7/30/76	WPB-25.5	1030.	0.0	28.5	3.1	1000.	6.90
7/30/76	WPB-25.5	1030.	1.0	28.5	3.1	1000.	6.90
7/30/76	WPB-25.5	1030.	2.0	28.4	2.9	1000.	6.90
7/30/76	WPB-25.5	1030.	3.0	28.4	2.8	1050.	6.80
7/30/76	WPB-25.5	1030.	4.0	28.4	2.8	1050.	6.80
7/30/76	WPB-25.5	1030.	5.0	28.4	2.7	1100.	6.80
7/30/76	WPB-25.5	1100.	6.0	28.4	2.7	1150.	6.80

APPENDIX C-2 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
7/30/76	WPB-25.4	1130.	0.0	28.4	2.9	1200.	6.80
7/30/76	WPB-25.4	1130.	1.0	28.4	2.8	1200.	6.80
7/30/76	WPB-25.4	1130.	2.0	28.4	2.8	1300.	6.70
7/30/76	WPB-25.4	1130.	3.0	28.4	2.6	1300.	6.70
7/30/76	WPB-25.4	1130.	4.0	28.4	2.6	1300.	6.70
7/30/76	WPB-25.4	1130.	5.0	28.3	2.6	1350.	6.70
7/30/76	WPB-25.4	1130.	6.0	28.3	2.6	1350.	6.70
8/24/76	WPB-25.4	1115.	0.0	29.0	3.8	1400.	7.20
8/24/76	WPB-25.4	1115.	1.0	28.0	1.1	1400.	7.20
8/24/76	WPB-25.4	1115.	2.0	28.0	0.9	1400.	7.20
8/24/76	WPB-25.4	1115.	3.0	28.0	0.9	1475.	7.20
8/24/76	WPB-25.4	1115.	4.0	28.0	0.7	1750.	7.15
8/24/76	WPB-25.4	1115.	5.0	28.0	0.7	1800.	7.15
8/24/76	WPB-25.4	1115.	6.0	28.0	0.7	1800.	7.10
8/24/76	WPB-25.5	1130.	0.0	30.0	4.2	1300.	7.30
8/24/76	WPB-25.5	1130.	1.0	28.0	1.1	1350.	7.20
8/24/76	WPB-25.5	1130.	2.0	28.0	0.8	1375.	7.20
8/24/76	WPB-25.5	1130.	3.0	28.0	0.8	1425.	7.25
8/24/76	WPB-25.5	1130.	4.0	28.0	0.7	1700.	7.20
8/24/76	WPB-25.5	1130.	5.0	28.0	0.6	1725.	7.20
8/24/76	WPB-25.5	1130.	6.0	28.0	0.6	1750.	7.15
9/21/76	WPB-25.5	1110.	0.0	26.5	1.4	1600.	7.00
9/21/76	WPB-25.5	1110.	1.0	26.0	1.1	1600.	7.00
9/21/76	WPB-25.5	1110.	2.0	26.0	1.0	1600.	7.00
9/21/76	WPB-25.5	1110.	3.0	26.0	0.9	1600.	7.05
9/21/76	WPB-25.5	1110.	4.0	26.0	0.9	1600.	7.05
9/21/76	WPB-25.5	1110.	5.0	26.0	0.9	1600.	7.05
9/21/76	WPB-25.4	1120.	0.0	27.0	1.9	1575.	7.10
9/21/76	WPB-25.5	1120.	1.0	26.0	1.2	1600.	7.10
9/21/76	WPB-25.5	1120.	2.0	26.0	1.0	1600.	7.10
9/21/76	WPB-25.5	1120.	3.0	26.0	0.9	1600.	7.05
9/21/76	WPB-25.5	1120.	4.0	26.0	0.9	1600.	7.05
9/21/76	WPB-25.5	1120.	5.0	26.0	0.8	1600.	7.05
9/21/76	WPB-25.5	1120.	5.5	26.0	0.8	1600.	7.05
12/ 2/76	WPB-25.5	1435.	0.0	19.6	6.6	740.	7.60
12/ 2/76	WPB-25.5	1435.	1.0	19.6	6.6	740.	7.60
12/ 2/76	WPB-25.5	1435.	2.0	19.6	6.5	740.	7.60
12/ 2/76	WPB-25.5	1435.	3.0	19.6	6.4	740.	7.60
12/ 2/76	WPB-25.5	1435.	4.0	19.6	6.4	740.	7.60
12/ 2/76	WPB-25.5	1435.	5.0	19.6	6.4	740.	7.60

APPENDIX C-2 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
12/ 2/76	WPB-25.5	1435.	6.0	19.6	6.4	740.	7.60
12/ 2/76	WPB-25.4	1450.	0.0	19.6	6.6	740.	7.60
12/ 2/76	WPB-25.4	1450.	1.0	19.[illegible]	6.5	740.	7.60
12/ 2/76	WPB-25.4	1450.	2.0	19.6	6.6	740.	7.60
12/ 2/76	WPB-25.4	1450.	3.0	19.6	6.5	740.	7.60
12/ 2/76	WPB-25.4	1450.	4.0	19.6	6.4	740.	7.60
12/ 2/76	WPB-25.4	1450.	5.0	19.6	6.4	740.	7.60
12/ 2/76	WPB-25.4	1450.	6.0	19.6	6.4	740.	7.60
2/ 9/77	WPB-25.5	1400.	0.0	18.0	5.8	1500.	7.50
2/ 9/77	WPB-25.5	1400.	1.0	17.8	5.7	1510.	7.50
2/ 9/77	WPB-25.5	1400.	2.0	17.5	5.6	1520.	7.50
2/ 9/77	WPB-25.5	1400.	3.0	17.0	5.6	1520.	7.50
2/ 9/77	WPB-25.5	1400.	4.0	16.9	4.7	1540.	7.50
2/ 9/77	WPB-25.5	1400.	5.0	16.8	4.4	1560.	7.50
2/ 9/77	WPB-25.5	1400.	6.0	16.8	4.3	1590.	7.50
2/ 9/77	WPB-25.4	1415.	0.0	18.1	6.2	1520.	7.50
2/ 9/77	WPB-25.4	1415.	1.0	17.7	6.3	1530.	7.50
2/ 9/77	WPB-25.4	1415.	2.0	17.2	6.0	1530.	7.50
2/ 9/77	WPB-25.4	1415.	3.0	16.8	5.4	1540.	7.50
2/ 9/77	WPB-25.4	1415.	4.0	16.8	5.4	1540.	7.50
2/ 9/77	WPB-25.4	1415.	5.0	16.8	5.4	1550.	7.50
2/ 9/77	WPB-25.4	1415.	6.0	16.8	5.4	1550.	7.50
4/11/77	WPB-25.4	1455.	0.0	22.6	7.4	740.	7.80
4/11/77	WPB-25.4	1455.	1.0	22.5	7.6	740.	7.80
4/11/77	WPB-25.4	1455.	2.0	22.4	7.6	740.	7.80
4/11/77	WPB-25.4	1455.	3.0	22.3	7.6	740.	7.80
4/11/77	WPB-25.4	1455.	4.0	22.2	7.6	740.	7.80
4/11/77	WPB-25.4	1455.	5.0	21.8	6.8	780.	7.50
4/11/77	WPB-25.4	1455.	6.0	21.8	6.7	790.	7.50
4/11/77	WPB-25.5	1520.	0.0	22.4	7.5	740.	7.80
4/11/77	WPB-25.5	1520.	0.0	22.4	7.5	740.	7.80
4/11/77	WPB-25.5	1520.	0.0	22.4	7.5	740.	7.80
4/11/77	WPB-25.5	1520.	1.0	22.3	7.6	740.	7.80
4/11/77	WPB-25.5	1520.	2.0	22.3	7.6	750.	7.70
4/11/77	WPB-25.5	1520.	3.0	22.3	7.6	750.	7.70
4/11/77	WPB-25.5	1520.	4.0	22.3	7.6	760.	7.70
4/11/77	WPB-25.5	1520.	5.0	21.4	5.3	920.	7.10
4/11/77	WPB-25.5	1520.	6.0	21.4	4.9	950.	7.10

APPENDIX C. IN SITU MEASUREMENTS FROM PROFILES IN THE RECEIVING CANALS ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES.

3. CATTLE RANCH # 1

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
6/ 1/76	WPB-31.5	1120.	0.0	27.5	3.2	1900.	6.00
6/ 1/76	WPB-31.5	1120.	2.0	25.5	1.4	1800.	6.40
6/ 1/76	WPB-31.5	1120.	3.0	25.5	1.4	1800.	6.70
6/ 1/76	WPB-31.4	1150.	0.0	26.0	2.3	1700.	6.50
6/ 1/76	WPB-31.4	1150.	2.0	25.5	1.9	1650.	6.35
6/ 1/76	WPB-31.4	1150.	3.0	25.5	1.6	1700.	6.30
6/ 1/76	WPB-30.4	1215.	0.0	27.0	3.5	1700.	6.55
6/ 1/76	WPB-30.4	1215.	2.0	25.5	1.7	1650.	6.40
6/ 1/76	WPB-30.4	1215.	3.0	25.2	1.6	1650.	6.25
6/ 1/76	WPB-29.8	1245.	0.0	26.5	3.5	1550.	7.10
6/ 1/76	WPB-29.8	1245.	2.0	25.0	1.6	1550.	7.00
6/ 1/76	WPB-29.8	1245.	3.0	25.0	1.6	1550.	6.45
6/17/76	WPB-31.4	1420.	0.0	29.7	6.2	1650.	7.50
6/17/76	WPB-31.4	1420.	1.0	28.1	2.7	1850.	7.40
6/17/76	WPB-31.4	1420.	2.0	27.2	1.5	1900.	7.30
6/17/76	WPB-31.4	1420.	3.0	27.1	1.5	1900.	7.30
6/17/76	WPB-31.4	1420.	4.0	27.0	1.4	1900.	7.30
6/17/76	WPB-31.5	1320.	0.0	29.9	6.3	1900.	7.25
6/17/76	WPB-31.5	1320.	1.0	28.2	2.9	1900.	7.10
6/17/76	WPB-31.5	1320.	2.0	27.3	1.5	1900.	7.00
6/17/76	WPB-31.5	1320.	3.0	27.1	1.5	1900.	7.00
6/17/76	WPB-31.5	1320.	4.0	27.0	1.3	1900.	7.00
6/17/76	WPB-33.5	1340.	0.0	30.7	5.7	1850.	7.50
6/17/76	WPB-33.5	1340.	1.0	28.3	3.8	1900.	7.40
6/17/76	WPB-33.5	1340.	2.0	27.5	1.4	1900.	7.30
6/17/76	WPB-33.5	1340.	3.0	27.2	1.4	1850.	7.30
6/17/76	WPB-33.5	1340.	4.0	26.3	1.8	1700.	7.20
7/ 1/76	WPB-31.5	1540.	0.0	29.5	1.9	1700.	7.00
7/ 1/76	WPB-31.5	1540.	1.0	29.5	1.7	1750.	6.90
7/ 1/76	WPB-31.5	1540.	2.0	29.4	1.7	1750.	6.90
7/ 1/76	WPB-31.5	1540.	3.0	29.4	1.6	1750.	6.90
7/ 1/76	WPB-31.5	1540.	4.0	29.4	1.6	1800.	6.90
7/ 1/76	WPB-31.4	1630.	0.0	29.5	1.6	1700.	7.10
7/ 1/76	WPB-31.4	1630.	1.0	29.4	1.6	1700.	7.00
7/ 1/76	WPB-31.4	1630.	2.0	29.4	1.6	1700.	7.00
7/ 1/76	WPB-31.4	1630.	3.0	29.4	1.4	1750.	7.00
7/ 1/76	WPB-31.4	1630.	4.0	29.4	1.5	1750.	7.00
7/15/76	WPB-31.5	1100.	0.0	30.2	3.9	1400.	7.80
7/15/76	WPB-31.5	1100.	1.0	29.5	3.1	1450.	7.90
7/15/76	WPB-31.5	1100.	2.0	28.3	0.7	1650.	7.80

APPENDIX C-3 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
7/15/76	WPB-31.5	1100.	3.0	28.2	0.2	1700.	7.70
7/15/76	WPB-31.5	1100.	4.0	27.9	0.1	1700.	7.60
7/15/76	WPB-31.5	1100.	5.0	27.8	0.1	1700.	7.60
7/15/76	WPB-31.4	1125.	0.0	30.4	4.1	1050.	7.60
7/15/76	WPB-31.4	1125.	1.0	29.5	3.1	1100.	7.60
7/15/76	WPB-31.4	1125.	2.0	28.3	0.4	1300.	7.50
7/15/76	WPB-31.4	1125.	3.0	28.2	0.1	1300.	7.50
7/15/76	WPB-31.4	1125.	4.0	27.8	0.1	1400.	7.50
7/15/76	WPB-31.4	1125.	5.0	27.8	0.1	1400.	7.50
7/15/76	WPB-31.6	1150.	0.0	30.8	4.5	1400.	7.60
7/15/76	WPB-31.6	1150.	1.0	29.9	3.3	1450.	7.70
7/15/76	WPB-31.6	1150.	2.0	28.3	0.7	1600.	7.60
7/15/76	WPB-31.6	1150.	3.0	28.1	0.1	1700.	7.60
7/15/76	WPB-31.6	1150.	4.0	27.8	0.1	1700.	7.60
7/15/76	WPB-31.6	1150.	5.0	27.8	0.1	1700.	7.50
7/30/76	WPB-31.4	830.	0.0	29.0	3.2	1000.	7.10
7/30/76	WPB-31.4	830.	1.0	29.0	3.2	1000.	7.20
7/30/76	WPB-31.4	830.	2.0	28.8	2.4	1100.	7.10
7/30/76	WPB-31.4	830.	3.0	28.7	1.1	1100.	7.10
7/30/76	WPB-31.4	830.	4.0	28.6	0.5	1200.	7.10
7/30/76	WPB-31.4	830.	5.0	28.6	0.5	1200.	7.10
7/30/76	WPB-31.5	900.	0.0	29.1	3.5	1350.	7.10
7/30/76	WPB-31.5	900.	0.0	29.1	3.5	1350.	7.10
7/30/76	WPB-31.5	900.	0.0	29.1	3.5	1350.	7.10
7/30/76	WPB-31.5	900.	1.0	29.0	3.5	1350.	7.10
7/30/76	WPB-31.5	900.	2.0	28.9	2.2	1350.	7.00
7/30/76	WPB-31.5	900.	3.0	28.7	1.0	1400.	6.90
7/30/76	WPB-31.5	900.	4.0	28.7	0.3	1400.	6.90
7/30/76	WPB-31.6	940.	0.0	29.5	4.7	1000.	7.00
7/30/76	WPB-31.6	940.	1.0	29.0	3.7	1050.	7.10
7/30/76	WPB-31.6	940.	2.0	28.7	2.5	1100.	7.00
7/30/76	WPB-31.6	940.	3.0	28.6	0.9	1100.	6.90
7/30/76	WPB-31.6	940.	4.0	28.5	0.3	1200.	6.90
7/30/76	WPB-31.6	940.	5.0	28.4	0.1	1200.	6.90
8/12/76	WPB-31.4	1030.	0.0	28.5	< 0.1	1500.	7.60
8/12/76	WPB-31.4	1030.	1.0	28.5	2.8	1500.	7.60
8/12/76	WPB-31.4	1030.	2.0	28.5	2.4	1500.	7.60
8/12/76	WPB-31.4	1030.	3.0	28.0	< 0.1	1600.	7.50
8/12/76	WPB-31.4	1030.	4.0	27.5	< 0.1	1600.	7.40
8/12/76	WPB-31.4	1030.	5.0	27.5		1600.	7.40

APPENDIX C-3 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
8/12/76	WPB-31.5	1100.	0.0	28.5	2.9	1500.	7.40
8/12/76	WPB-31.5	1100.	0.0	28.5	2.9	1500.	7.40
8/12/76	WPB-31.5	1100.	0.0	28.5	2.9	1500.	7.40
8/12/76	WPB-31.5	1100.	1.0	28.0	2.2	1500.	7.40
8/12/76	WPB-31.5	1100.	2.0	28.5	2.1	1600.	7.30
8/12/76	WPB-31.5	1100.	3.0	28.0	< 0.1	1600.	7.20
8/12/76	WPB-31.5	1100.	4.0	27.5	< 0.1	1600.	7.20
8/12/76	WPB-33.5	1130.	0.0	28.0	3.5	1500.	7.30
8/12/76	WPB-33.5	1130.	1.0	28.0	2.1	1500.	7.30
8/12/76	WPB-33.5	1130.	2.0	28.0	1.8	1500.	7.30
8/12/76	WPB-33.5	1130.	3.0	27.5	0.3	1600.	7.20
8/12/76	WPB-33.5	1130.	4.0	27.5	< 0.1	1650.	7.20
8/24/76	WPB-31.4	1000.	0.0	29.0	2.6	1400.	7.25
8/24/76	WPB-31.4	1000.	1.0	28.5	1.8	1400.	
8/24/76	WPB-31.4	1000.	2.0	28.5	1.8	1400.	
8/24/76	WPB-31.4	1000.	3.0	28.5	1.8	1400.	
8/24/76	WPB-31.4	1000.	4.0	28.5	1.8	1400.	
8/24/76	WPB-31.5	1020.	0.0	29.5	2.4	1200.	7.30
8/24/76	WPB-31.5	1020.	0.0	29.5	2.4	1200.	7.30
8/24/76	WPB-31.5	1020.	0.0	29.5	2.4	1200.	7.30
8/24/76	WPB-31.5	1020.	1.0	28.5	1.9	1275.	7.30
8/24/76	WPB-31.5	1020.	2.0	28.5	1.7	1300.	7.30
8/24/76	WPB-31.5	1020.	3.0	28.5	1.7	1300.	7.30
8/24/76	WPB-31.5	1020.	4.5	28.5	1.6	1300.	7.30
8/24/76	WPB-33.5	1040.	0.0	29.0	3.9	1200.	7.35
8/24/76	WPB-33.5	1040.	1.0	28.5	1.9	1200.	7.35
8/24/76	WPB-33.5	1020.	2.0	28.5	1.6	1250.	7.30
8/24/76	WPB-33.5	1020.	3.0	28.5	1.6	1300.	7.30
8/24/76	WPB-33.5	1020.	4.0	28.5	1.5	1300.	7.30
9/ 9/76	WPB-31.5	1045.	0.0	27.5	1.1	1375.	6.80
9/ 9/76	WPB-31.5	1045.	0.0	27.5	1.1	1375.	6.80
9/ 9/76	WPB-31.5	1045.	0.0	27.5	1.1	1375.	6.80
9/ 9/76	WPB-31.5	1045.	1.0	27.0	0.8	1400.	6.70
9/ 9/76	WPB-31.5	1045.	2.0	26.5	0.7	1400.	6.70
9/ 9/76	WPB-31.5	1045.	3.0	26.5	0.7	1400.	6.70
9/ 9/76	WPB-31.5	1045.	4.0	26.5	0.6	1400.	6.70
9/ 9/76	WPB-31.4	1110.	0.0	26.5	1.3	1300.	
9/ 9/76	WPB-31.4	1110.	1.0	26.5	1.3	1300.	
9/ 9/76	WPB-31.4	1110.	2.0	26.5	1.2	1350.	
9/ 9/76	WPB-31.4	1110.	3.0	26.5	1.1	1350.	

APPENDIX C-3 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
9/ 9/76	WPB-31.4	1100.	4.0	26.5	1.1	1350.	
9/ 9/76	WPB-31.6	1125.	0.0	26.5	1.3	1100.	
9/ 9/76	WPB-31.6	1125.	1.0	26.5	1.2	1150.	
9/ 9/76	WPB-31.6	1125.	2.0	26.5	1.2	1200.	
9/ 9/76	WPB-31.6	1125.	3.0	26.5	1.1	1225.	
9/ 9/76	WPB-31.6	1125.	4.0	26.5	1.1	1250.	
9/21/76	WPB-31.5	1015.	0.0	26.0	1.0	1500.	6.80
9/21/76	WPB-31.5	1015.	1.0	26.0	0.5	1450.	6.80
9/21/76	WPB-31.5	1015.	2.0	26.0	0.5	1450.	6.80
9/21/76	WPB-31.5	1015.	3.0	26.0	0.4	1450.	6.90
9/21/76	WPB-31.5	1015.	4.0	26.0	0.4	1450.	6.90
9/21/76	WPB-31.4	1025.	0.0	26.0	0.9	1500.	7.05
9/21/76	WPB-31.4	1025.	0.0	26.0	0.9	1500.	7.05
9/21/76	WPB-31.4	1025.	0.0	26.0	0.9	1500.	7.05
9/21/76	WPB-31.4	1025.	1.0	25.5	0.8	1500.	7.00
9/21/76	WPB-31.4	1025.	2.0	25.5	0.8	1500.	7.00
9/21/76	WPB-31.4	1025.	3.0	25.5	1.0	1525.	6.95
9/21/76	WPB-31.0	1045.	0.0	26.5	1.3	1500.	7.15
9/21/76	WPB-31.0	1045.	1.0	26.0	0.8	1500.	7.10
9/21/76	WPB-31.0	1045.	3.0	25.5	0.8	1525.	7.05
9/21/76	WPB-31.0	1045.	4.0	25.5	0.8	1525.	7.05
10/ 6/76	WPB-31.4	1140.	0.0	27.1	6.6	810.	7.60
10/ 6/76	WPB-31.4	1140.	1.0	26.6	5.6	920.	7.50
10/ 6/76	WPB-31.4	1140.	2.0	26.0	2.7	1050.	7.40
10/ 6/76	WPB-31.4	1140.	3.0	25.7	1.3	1100.	7.30
10/ 6/76	WPB-31.4	1140.	4.0	25.7	0.9	1200.	7.30
10/ 6/76	WPB-31.5	1200.	0.0	27.3	6.5	1600.	
10/ 6/76	WPB-31.5	1200.	0.0	27.3	6.5	1600.	
10/ 6/76	WPB-31.5	1200.	0.0	27.3	6.5	1600.	
10/ 6/76	WPB-31.5	1200.	1.0	26.5	5.2	1600.	
10/ 6/76	WPB-31.5	1200.	2.0	26.0	1.7	1700.	
10/ 6/76	WPB-31.5	1200.	3.0	25.8	0.5	1750.	
10/ 6/76	WPB-31.5	1200.	4.0	25.7	0.2	1800.	
10/ 6/76	WPB-33.5	1230.	0.0	27.2	7.0	1700.	
10/ 6/76	WPB-33.5	1230.	1.0	26.3	5.0	1700.	
10/ 6/76	WPB-33.5	1230.	2.0	26.1	2.9	1750.	
10/ 6/76	WPB-33.5	1230.	3.0	25.6	0.6	1800.	
10/ 6/76	WPB-33.5	1230.	4.0	25.5	0.2	1800.	
12/ 2/76	WPB-31.5	1315.	0.0	20.1	7.4	620.	7.80
12/ 2/76	WPB-31.5	1315.	1.0	19.9	7.2	620.	7.80

APPENDIX C-3 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
12/ 2/76	WPB-31.5	1315.	2.0	19.9	7.2	620.	7.70
12/ 2/76	WPB-31.5	1315.	3.0	19.9	7.0	630.	7.70
12/ 2/76	WPB-31.5	1315.	4.0	19.7	6.2	660.	7.60
12/ 2/76	WPB-31.4	1335.	0.0	20.0	7.6	620.	7.80
12/ 2/76	WPB-31.4	1335.	1.0	19.9	7.4	620.	7.80
12/ 2/76	WPB-31.4	1335.	2.0	19.9	7.3	620.	7.80
12/ 2/76	WPB-31.4	1335.	3.0	19.9	7.1	620.	7.80
12/ 2/76	WPB-31.4	1335.	4.0	19.8	5.0	740.	7.50
12/ 2/76	WPB-31.4	1335.	5.0	19.8	4.7	780.	7.40
12/ 2/76	WPB-31.0	1355.	0.0	19.9	7.3	640.	7.70
12/ 2/76	WPB-31.0	1355.	0.0	19.9	7.3	640.	7.70
12/ 2/76	WPB-31.0	1355.	0.0	19.9	7.3	640.	7.70
12/ 2/76	WPB-31.0	1355.	1.0	19.9	6.9	640.	7.70
12/ 2/76	WPB-31.0	1355.	2.0	19.9	6.7	640.	7.70
12/ 2/76	WPB-31.0	1355.	3.0	19.9	6.7	660.	7.50
12/ 2/76	WPB-31.0	1355.	4.0	19.8	4.3	820.	7.20
12/ 2/76	WPB-31.0	1355.	5.0	19.8	3.5	860.	7.20
2/ 9/77	WPB-31.5	1300.	0.0	17.4	5.2	1700.	7.60
2/ 9/77	WPB-31.5	1300.	1.0	17.2	5.0	1700.	7.60
2/ 9/77	WPB-31.5	1300.	2.0	16.7	4.6	1700.	7.60
2/ 9/77	WPB-31.5	1300.	3.0	16.7	4.4	1700.	7.60
2/ 9/77	WPB-31.5	1300.	4.0	16.7	4.2	1700.	7.60
2/ 9/77	WPB-31.5	1300.	5.0	16.7	4.1	1700.	7.60
2/ 9/77	WPB-31.4	1320.	0.0	17.5	5.2	1700.	7.60
2/ 9/77	WPB-31.4	1320.	0.0	17.5	5.2	1700.	7.60
2/ 9/77	WPB-31.4	1320.	0.0	17.5	5.2	1700.	7.60
2/ 9/77	WPB-31.4	1320.	1.0	17.3	5.0	1700.	7.60
2/ 9/77	WPB-31.4	1320.	2.0	16.6	4.4	1700.	7.60
2/ 9/77	WPB-31.4	1320.	3.0	16.6	4.4	1700.	7.60
2/ 9/77	WPB-31.4	1320.	4.0	16.6	4.4	1700.	7.60
2/ 9/77	WPB-31.4	1320.	5.0	16.6	4.4	1700.	7.60
2/ 9/77	WPB-31.0	1335.	0.0	17.6	5.5	1600.	7.60
2/ 9/77	WPB-31.0	1335.	1.0	17.1	5.1	1600.	7.60
2/ 9/77	WPB-31.0	1335.	2.0	16.7	4.8	1600.	7.60
2/ 9/77	WPB-31.0	1335.	3.0	16.6	4.6	1600.	7.60
2/ 9/77	WPB-31.0	1335.	4.0	16.6	4.5	1600.	7.60
2/ 9/77	WPB-31.0	1335.	5.0	16.6	4.5	1600.	7.60
3/ 9/77	WPB-31.4	1310.	0.0	21.1	7.8	780.	8.00
3/ 9/77	WPB-31.4	1310.	1.0	21.1	7.8	780.	8.00
3/ 9/77	WPB-31.4	1310.	2.0	21.0	7.8	780.	8.00

APPENDIX C-3 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
3/ 9/77	WPB-31.4	1310.	3.0	20.8	7.5	780.	8.00
3/ 9/77	WPB-31.4	1310.	4.0	20.7	7.4	780.	8.00
3/ 9/77	WPB-31.4	1310.	5.0	20.6	7.3	780.	8.00
3/ 9/77	WPB-31.5	1330.	0.0	21.0	7.5	790.	7.90
3/ 9/77	WPB-31.5	1330.	0.0	21.0	7.5	790.	7.90
3/ 9/77	WPB-31.5	1330.	0.0	21.0	7.5	790.	7.90
3/ 9/77	WPB-31.5	1330.	1.0	20.9	7.6	790.	8.00
3/ 9/77	WPB-31.5	1330.	2.0	20.8	7.6	790.	8.00
3/ 9/77	WPB-31.5	1330.	3.0	20.7	7.4	790.	8.00
3/ 9/77	WPB-31.5	1330.	4.0	20.6	7.4	790.	8.00
3/ 9/77	WPB-31.5	1330.	5.0	20.6	7.3	800.	8.00
3/ 9/77	WPB-33.5	1400.	0.0	20.8	7.4	780.	8.00
3/ 9/77	WPB-33.5	1400.	1.0	20.8	7.5	780.	8.00
3/ 9/77	WPB-33.5	1400.	2.0	20.7	7.5	790.	8.00
3/ 9/77	WPB-33.5	1400.	3.0	20.7	7.5	800.	8.00
3/ 9/77	WPB-33.5	1400.	4.0	20.5	7.2	810.	7.90
3/ 9/77	WPB-33.5	1400.	5.0	20.4	6.7	840.	7.90
4/11/77	WPB-31.4	1330.	0.0	23.4	8.0	730.	8.00
4/11/77	WPB-31.4	1330.	1.0	23.2	7.9	730.	8.00
4/11/77	WPB-31.4	1330.	2.0	23.1	7.9	730.	8.00
4/11/77	WPB-31.4	1330.	3.0	23.0	7.9	730.	8.00
4/11/77	WPB-31.4	1330.	4.0	22.9	7.8	730.	8.00
4/11/77	WPB-31.4	1330.	5.0	22.7	7.6	730.	8.00
4/11/77	WPB-31.5	1350.	0.0	23.3	7.9	730.	8.00
4/11/77	WPB-31.5	1350.	1.0	23.1	7.9	730.	8.00
4/11/77	WPB-31.5	1350.	2.0	23.1	7.9	730.	8.00
4/11/77	WPB-31.5	1350.	3.0	23.0	7.9	730.	8.00
4/11/77	WPB-31.5	1350.	4.0	22.9	7.9	730.	8.00
4/11/77	WPB-31.5	1350.	5.0	22.7	7.7	740.	7.90
4/11/77	WPB-33.5	1415.	0.0	23.2	7.8	730.	8.00
4/11/77	WPB-33.5	1415.	1.0	23.1	7.9	730.	8.00
4/11/77	WPB-33.5	1415.	2.0	23.0	7.9	730.	8.00
4/11/77	WPB-33.5	1415.	3.0	23.0	7.9	730.	8.00
4/11/77	WPB-33.5	1415.	4.0	22.8	7.7	730.	7.90

APPENDIX C. IN SITU MEASUREMENTS FROM PROFILES IN THE RECEIVING CANALS ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES.

4. CATTLE RANCH # 2

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
7/28/76	L06-01.9	930.	0.0	27.6	2.0	1300.	7.20
7/28/76	L06-01.9	930.	1.0	27.6	1.7	1300.	7.00
7/28/76	L06-01.9	930.	2.0	27.6	1.6	1400.	6.90
7/28/76	L06-02.0	955.	0.0	27.6	1.5	1100.	7.10
7/28/76	L06-02.0	955.	0.0	27.6	1.5	1100.	7.10
7/28/76	L06-02.0	955.	0.0	27.6	1.5	1100.	7.10
7/28/76	L06-02.0	955.	1.0	27.5	1.4	1150.	7.10
7/28/76	L06-02.0	955.	2.0	27.5	1.3	1200.	7.10
7/28/76	L06-03.8	1030.	0.0	27.5	1.4	1300.	7.00
7/28/76	L06-03.8	1030.	1.0	27.5	1.3	1350.	7.00
7/28/76	L06-03.8	1030.	2.0	27.4	1.2	1400.	7.00
7/28/76	L06-03.8	1030.	3.0	27.4	1.2	1450.	7.00
8/26/76	L06-01.9	955.	0.0	28.0	1.1	1250.	7.10
8/26/76	L06-01.9	955.	1.0	28.0	1.0	1475.	7.10
8/26/76	L06-01.9	955.	2.0	28.0	0.9	1500.	7.10
8/26/76	L06-02.0	1010.	0.0	28.0	1.0	1700.	7.10
8/26/76	L06-02.0	1010.	1.0	28.0	0.9	1700.	7.10
8/26/76	L06-02.0	1010.	2.0	28.0	0.8	1700.	7.10
8/26/76	L06-03.8	1020.	0.0	27.5	0.6	1650.	7.10
8/26/76	L06-03.8	1020.	1.0	27.5	0.6	1650.	7.10
8/26/76	L06-03.8	1020.	2.0	27.5	0.5	1650.	7.10
8/26/76	L06-03.8	1020.	3.0	27.5	0.4	1650.	7.10
9/22/76	L06-01.9	1030.	0.0	25.2	1.0	1400.	6.90
9/22/76	L06-01.9	1030.	1.0	25.0	0.6	1400.	6.90
9/22/76	L06-01.9	1030.	2.0	25.0	0.4	1400.	6.90
9/22/76	L06-02.0	1050.	0.0	24.8	0.7	1450.	6.90
9/22/76	L06-02.0	1050.	1.0	24.6	0.6	1450.	6.80
9/22/76	L06-02.0	1050.	2.0	24.3	0.5	1400.	6.80
9/22/76	L06-03.8	1110.	0.0	24.2	< 0.1	1350.	6.90
9/22/76	L06-03.8	1110.	1.0	24.1	< 0.1	1350.	6.90
9/22/76	L06-03.8	1110.	2.0	24.1	< 0.1	1350.	6.90
9/22/76	L06-03.8	1110.	3.0	24.0	< 0.1	1350.	6.80
11/ 9/76	L06-02.0	1330.	0.0	21.1	3.4	800.	7.40
11/ 9/76	L06-02.0	1330.	1.0	20.8	2.9	820.	7.40
11/ 9/76	L06-02.0	1330.	2.0	20.4	2.3	820.	7.40
11/ 9/76	L06-01.9	1345.	0.0	21.0	3.2	860.	7.50
11/ 9/76	L06-01.9	1345.	1.0	20.9	2.9	860.	7.40
11/ 9/76	L06-01.9	1345.	2.0	20.6	2.3	860.	7.40
12/ 1/76	L06-02.0	1200.	0.0	20.7	6.0	960.	7.60
12/ 1/76	L06-02.0	1200.	1.0	20.7	5.8	960.	7.60

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
12/ 1/76	L06-02.0	1200.	2.0	20.7	5.6	960.	7.60
12/ 1/76	L06-02.0	1200.	3.0	20.7	5.6	960.	7.60
12/ 1/76	L06-01.9	1220.	0.0	20.7	5.7	960.	7.60
12/ 1/76	L06-01.9	1220.	1.0	20.7	5.6	960.	7.60
12/ 1/76	L06-01.9	1220.	2.0	20.7	5.4	980.	7.60
2/ 8/77	L06-01.9	1430.	0.0	19.2		1440.	7.30
2/ 8/77	L06-01.9	1430.	1.0	19.2		1440.	7.30
2/ 8/77	L06-01.9	1430.	2.0	19.2		1440.	7.30
2/ 8/77	L06-02.0	1450.	0.0	19.1		1440.	7.30
2/ 8/77	L06-02.0	1450.	1.0	19.1		1440.	7.30
2/ 8/77	L06-02.0	1450.	2.0	19.1		1440.	7.30
2/ 8/77	L06-03.8	1510.	0.0	18.8		1460.	7.60
2/ 8/77	L06-03.8	1510.	1.0	18.8		1460.	7.60
2/ 8/77	L06-03.8	1510.	2.0	18.8		1460.	7.60
2/ 8/77	L06-03.8	1510.	3.0	18.7		1460.	7.60
4/12/77	L06-01.9	1230.	0.0	22.7	6.1	950.	7.60
4/12/77	L06-01.9	1230.	1.0	22.7	6.0	950.	7.60
4/12/77	L06-01.9	1230.	2.0	22.7	5.8	950.	7.60
4/12/77	L06-02.0	1245.	0.0	22.9	6.5	950.	7.70
4/12/77	L06-02.0	1245.	1.0	22.9	6.4	950.	7.70
4/12/77	L06-02.0	1245.	2.0	22.8	6.2	950.	7.70

APPENDIX C. <u>IN SITU</u> MEASUREMENTS FROM PROFILES IN THE RECEIVING CANALS ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES.

5. VEGETABLE FARM # 1

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
6/ 1/76	UCN-04.6	1435.	0.0	27.0	2.9	1500.	6.60
6/ 1/76	UCN-04.6	1435.	1.5	26.5	2.3	1525.	6.30
6/ 1/76	UCN-04.5	1454.	0.0	28.5	2.2	2100.	6.00
6/ 1/76	UCN-04.5	1454.	2.0	27.0	2.2	1700.	6.00
6/ 1/76	UCN-04.2	1511.	0.0	27.5	2.2	1400.	6.65
6/ 1/76	UCN-04.2	1511.	1.0	27.0	2.2	1500.	6.60
6/11/76	UCN-04.5	1100.	0.0	28.1	3.7	2350.	7.50
6/11/76	UCN-04.5	1100.	1.0	27.8	3.5	2400.	7.40
6/11/76	UCN-04.5	1100.	2.0	27.5	3.0	2400.	7.40
6/11/76	UCN-04.6	1000.	0.0	27.5	4.2	2400.	7.30
6/11/76	UCN-04.6	1000.	1.0	26.5	3.0	2600.	7.20
6/11/76	UCN-04.6	1000.	2.0	26.1	2.7	2750.	7.10
6/11/76	UCN-05.5	1045.	0.0	27.8	5.5	2100.	7.60
6/11/76	UCN-05.5	1045.	1.0	27.6	4.4	2300.	7.50
6/11/76	UCN-05.5	1045.	2.0	27.5	4.1	2300.	7.50
7/ 1/76	UCN-04.6	840.	0.0	28.6	2.3	2000.	6.50
7/ 1/76	UCN-04.6	840.	0.0	28.6	2.3	2000.	6.50
7/ 1/76	UCN-04.6	840.	0.0	28.6	2.3	2000.	6.50
7/ 1/76	UCN-04.6	840.	1.0	27.5	1.5	2500.	6.70
7/ 1/76	UCN-04.6	840.	2.0	26.4	1.2	2700.	7.00
7/ 1/76	UCN-04.5	940.	0.0	28.4	2.5	2100.	7.50
7/ 1/76	UCN-04.5	940.	1.0	27.0	1.8	2300.	7.50
7/ 1/76	UCN-04.5	940.	2.0	27.0	1.4	2400.	7.50
7/ 1/76	UCN-04.2	1040.	0.0	28.3	2.3	2200.	7.40
7/ 1/76	UCN-04.2	1040.	1.0	28.6	2.0	2200.	7.40
7/ 1/76	UCN-04.2	1040.	2.0	27.8	1.8	2300.	7.40
7/15/76	UCN-04.5	1410.	0.0	30.2	3.5	1500.	7.20
7/15/76	UCN-04.5	1410.	1.0	30.1	3.6	1600.	7.30
7/15/76	UCN-04.5	1410.	2.0	29.5	2.9	1900.	7.30
7/15/76	UCN-04.6	1345.	0.0	30.2	4.1	1900.	7.50
7/15/76	UCN-04.6	1345.	1.0	29.8	3.0	2100.	7.40
7/15/76	UCN-04.6	1345.	2.0	29.5	2.4	2200.	7.30
7/15/76	UCN-05.5	1430.	0.0	30.5	4.0	2300.	7.50
7/15/76	UCN-05.5	1430.	1.0	30.2	3.3	2400.	7.40
7/15/76	UCN-05.5	1430.	2.0	30.0	3.0	2400.	7.30
7/29/76	UCN-04.5	840.	0.0	27.8	1.8	1900.	6.90
7/29/76	UCN-04.5	840.	1.0	27.6	1.5	2000.	6.90
7/29/76	UCN-04.5	840.	2.0	27.3	1.3	2000.	7.00
7/29/76	UCN-04.5	840.	3.0	26.2	1.1	2100.	7.20
7/29/76	UCN-04.6	915.	0.0	27.7	2.0	2100.	7.20

DATE MO/DY/YR	STATION CODE	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
7/29/76	UCN-04.6	915.	0.0	27.7	2.0	2100.	7.20
7/29/76	UCN-04.6	915.	0.0	27.7	2.0	2100.	7.20
7/29/76	UCN-04.6	915.	1.0	27.2	1.7	2300.	7.20
7/29/76	UCN-04.6	915.	2.0	25.4	1.3	2350.	7.30
7/29/76	UCN-05.5	940.	0.0	26.1	2.2	1600.	7.20
7/29/76	UCN-05.5	940.	1.0	27.8	2.0	1600.	7.20
7/29/76	UCN-05.5	940.	2.0	27.8	1.7	1700.	7.00
8/12/76	UCN-04.6	1230.	0.0	27.5	1.6	1750.	7.10
8/12/76	UCN-04.6	1230.	1.0	27.5	1.0	1750.	7.10
8/12/76	UCN-04.5	1250.	0.0	27.5	2.4	1800.	7.10
8/12/76	UCN-04.5	1250.	1.0	27.5	1.8	2000.	7.10
8/12/76	UCN-04.5	1250.	2.0	27.5	1.8	2100.	7.10
8/12/76	UCN-04.2	1320.	0.0	27.5	1.6	2000.	7.10
8/12/76	UCN-04.2	1320.	1.0	27.5	1.6	2000.	7.10
8/12/76	UCN-04.2	1320.	2.0	27.5	1.3	2000.	7.10
8/24/76	UCN-04.6	1335.	0.0	28.5	2.1	1900.	7.15
8/24/76	UCN-04.6	1335.	1.0	28.5	1.9	1900.	7.15
8/24/76	UCN-04.6	1335.	1.5	28.5	1.7	1900.	7.20
8/24/76	UCN-04.5	1350.	0.0	28.5	1.8	2000.	7.20
8/24/76	UCN-04.5	1350.	1.0	28.5	1.8	1950.	7.20
8/24/76	UCN-04.5	1350.	2.0	28.5	1.7	1950.	7.20
8/24/76	UCN-04.2	1400.	0.0	29.0	2.0	2050.	7.20
8/24/76	UCN-04.2	1400.	1.0	28.5	2.0	2050.	7.20
8/24/76	UCN-04.2	1400.	2.0	28.5	1.9	2050.	7.20
9/ 9/76	UCN-04.6	1200.	0.0	27.5	2.0	1800.	
9/ 9/76	UCN-04.6	1200.	1.0	27.0	1.4	1800.	
9/ 9/76	UCN-04.6	1200.	1.5	27.0	1.3	1800.	
9/ 9/76	UCN-04.5	1215.	0.0	27.5	1.4	1800.	
9/ 9/76	UCN-04.5	1215.	1.0	27.0	1.4	1850.	
9/ 9/76	UCN-04.5	1215.	2.0	27.0	1.4	1900.	
9/ 9/76	UCN-04.2	1220.	0.0	27.5	1.4	1900.	
9/ 9/76	UCN-04.2	1220.	1.0	27.5	1.4	1900.	
9/ 9/76	UCN-04.2	1220.	1.5	27.5	1.4	1900.	
9/21/76	UCN-04.6	1215.	0.0	26.5	0.9	2175.	6.70
9/21/76	UCN-04.6	1215.	1.0	26.0	0.8	2175.	6.60
9/21/76	UCN-04.5	1235.	0.0	26.5	1.4	2175.	6.95
9/21/76	UCN-04.5	1235.	1.0	26.5	1.1	2175.	6.95
9/21/76	UCN-04.5	1235.	2.0	26.5	1.1	2175.	6.95
9/21/76	UCN-04.2	1250.	0.0	26.5	1.1	2175.	7.05
9/21/76	UCN-04.2	1250.	1.0	26.5	1.1	2175.	7.05

APPENDIX C-5 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
9/21/76	UCN-04.2	1250.	1.5	26.5	1.1	2175.	7.05
10/ 6/76	UCN-04.5	1015.	0.0	26.1	4.0	1700.	7.50
10/ 6/76	UCN-04.5	1015.	1.0	25.9	3.9	1900.	7.50
10/ 6/76	UCN-04.5	1015.	2.0	25.9	3.7	1900.	7.50
10/ 6/76	UCN-04.6	1030.	0.0	26.2	3.8	1900.	7.50
10/ 6/76	UCN-04.6	1030.	1.0	26.0	3.5	1900.	7.50
10/ 6/76	UCN-05.5	1050.	0.0	26.6	3.2	1300.	7.50
10/ 6/76	UCN-05.5	1050.	1.0	26.4	2.8	1300.	7.50
10/ 6/76	UCN-05.5	1050.	2.0	26.4	2.6	1600.	7.50
11/10/76	UCN-04.5	1030.	0.0	19.5	5.1	940.	7.50
11/10/76	UCN-04.5	1030.	1.0	19.4	5.0	960.	7.50
11/10/76	UCN-04.5	1030.	2.0	19.3	4.7	1020.	7.50
11/10/76	UCN-04.6	1045.	0.0	19.4	4.7	1000.	7.50
11/10/76	UCN-04.6	1045.	1.0	19.4	4.7	1020.	7.50
11/10/76	UCN-04.6	1045.	2.0	19.4	4.7	1020.	7.50
11/10/76	UCN-05.5	1110.	0.0	19.7	4.9	1000.	7.50
11/10/76	UCN-05.5	1110.	1.0	19.6	4.8	1000.	7.50
11/10/76	UCN-05.5	1110.	2.0	19.5	4.7	1010.	7.50
12/ 2/76	UCN-04.6	1015.	0.0	19.5	6.0	900.	7.60
12/ 2/76	UCN-04.6	1015.	1.0	19.5	5.9	920.	7.60
12/ 2/76	UCN-04.6	1015.	2.0	19.5	5.9	920.	7.60
12/ 2/76	UCN-04.5	1030.	0.0	19.6	6.0	900.	7.60
12/ 2/76	UCN-04.5	1030.	1.0	19.6	5.9	900.	7.60
12/ 2/76	UCN-04.5	1030.	2.0	19.5	5.8	900.	7.60
12/ 2/76	UCN-04.2	1050.	0.0	19.6	6.0	840.	7.60
12/ 2/76	UCN-04.2	1050.	1.0	19.5	5.9	840.	7.60
12/ 2/76	UCN-04.2	1050.	2.0	19.5	5.9	860.	7.60
2/ 9/77	UCN-04.5	1030.	0.0	19.5	0.2	2400.	7.10
2/ 9/77	UCN-04.5	1030.	1.0	19.2	0.1	2400.	7.20
2/ 9/77	UCN-04.5	1030.	2.0	18.1	0.1	2400.	7.40
2/ 9/77	UCN-04.6	1045.	0.0	18.1	0.4	2100.	7.50
2/ 9/77	UCN-04.6	1045.	1.0	17.9	0.7	2100.	7.50
2/ 9/77	UCN-04.6	1045.	2.0	17.8	1.1	2200.	7.40
2/ 9/77	UCN-05.5	1105.	0.0	17.6	5.7	2000.	7.70
2/ 9/77	UCN-05.5	1105.	1.0	17.6	5.6	2000.	7.70
2/ 9/77	UCN-05.5	1105.	2.0	17.5	5.6	2000.	7.70
3/ 9/77	UCN-04.5	1115.	0.0	20.7	6.2	1100.	7.60
3/ 9/77	UCN-04.5	1115.	1.0	20.7	6.1	1100.	7.60
3/ 9/77	UCN-04.5	1115.	2.0	20.7	6.1	1100.	7.60
3/ 9/77	UCN-04.6	1130.	0.0	20.7	5.9	1050.	7.70
3/ 9/77	UCN-04.6	1130.	1.0	20.7	5.8	1050.	7.70
3/ 9/77	UCN-04.6	1130.	2.0	20.6	5.8	1050.	7.70
4/11/77	UCN-04.5	1045.	0.0	22.9	7.9	700.	7.90
4/11/77	UCN-04.5	1045.	1.0	22.9	7.9	700.	7.90
4/11/77	UCN-04.5	1045.	2.0	22.9	7.9	700.	7.90
4/11/77	UCN-04.6	1105.	0.0	22.8	8.5	700.	8.00
4/11/77	UCN-04.6	1105.	1.0	22.8	8.0	700.	8.00
4/11/77	UCN-04.6	1105.	2.0	22.7	7.9	700.	7.90
4/11/77	UCN-05.5	1130.	0.0	22.8	8.0	700.	7.90
4/11/77	UCN-05.5	1130.	1.0	22.8	8.0	700.	7.90
4/11/77	UCN-05.5	1130.	2.0	22.7	8.1	700.	7.90

APPENDIX C. IN SITU MEASUREMENTS FROM PROFILES IN THE RECEIVING CANALS ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES

6. VEGETABLE FARM # 2

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
6/15/76	HLS-37.0	1045.	0.0		2.1	1800.	
6/15/76	HLS-37.1	1115.	0.0		2.3	1800.	
6/15/76	HLS-38.1	1145.	0.0		2.2	1600.	
6/30/76	HLS-37.0	1120.	0.0	28.7	2.1	1600.	6.20
6/30/76	HLS-37.0	1120.	1.0	28.5	1.6	1650.	6.60
6/30/76	HLS-37.0	1120.	2.0	27.8	1.4	1700.	6.60
6/30/76	HLS-37.0	1120.	3.0	27.7	1.2	1800.	6.70
6/30/76	HLS-37.0	1120.	4.0	27.5	0.9	1800.	6.80
6/30/76	HLS-37.1	1200.	0.0	29.5	2.4	1600.	7.70
6/30/76	HLS-37.1	1200.	0.0	29.5	2.4	1600.	7.70
6/30/76	HLS-37.1	1200.	0.0	29.5	2.4	1600.	7.70
6/30/76	HLS-37.1	1200.	1.0	28.2	1.6	1650.	7.70
6/30/76	HLS-37.1	1200.	2.0	28.0	1.5	1700.	7.60
6/30/76	HLS-37.1	1200.	3.0	27.6	1.4	1750.	7.50
6/30/76	HLS-37.1	1200.	4.0	27.6	1.3	1750.	7.40
7/28/76	HLS-37.0	1200.	0.0	31.5	9.4	1100.	7.30
7/28/76	HLS-37.0	1200.	1.0	28.5	4.6	1100.	7.30
7/28/76	HLS-37.0	1200.	2.0	28.0	2.3	1200.	7.50
7/28/76	HLS-37.0	1200.	3.0	26.5	1.1	1300.	7.50
7/28/76	HLS-37.0	1200.	4.0	26.0	0.6	1300.	7.40
7/28/76	HLS-37.1	1230.	0.0	30.1	9.5	1600.	7.10
7/28/76	HLS-37.1	1230.	1.0	30.0	4.1	1600.	7.20
7/28/76	HLS-37.1	1230.	2.0	28.0	2.0	1700.	7.10
7/28/76	HLS-37.1	1230.	3.0	27.0	0.9	1700.	7.20
7/28/76	HLS-37.1	1230.	4.0	26.5	0.7	1700.	7.10
8/26/76	HLS-37.0	1310.	0.0	31.0	4.6	1700.	7.25
8/26/76	HLS-37.0	1310.	1.0	28.5	1.5	1700.	
8/26/76	HLS-37.0	1310.	2.0	27.5	0.9	1775.	7.10
8/26/76	HLS-37.0	1310.	3.0	27.5	0.9	1775.	7.10
8/26/76	HLS-37.0	1310.	4.0	26.5	0.5	1625.	7.05
8/26/76	HLS-37.1	1330.	0.0	31.0	4.7	1700.	7.20
8/26/76	HLS-37.1	1330.	0.0	31.0	4.7	1700.	7.20
8/26/76	HLS-37.1	1330.	0.0	31.0	4.7	1700.	7.20
8/26/76	HLS-37.1	1330.	1.0	28.5	2.8	1700.	7.15
8/26/76	HLS-37.1	1330.	2.0	27.5	0.9	1750.	7.10
8/26/76	HLS-37.1	1330.	3.0	27.5	0.7	1700.	7.10
8/26/76	HLS-37.1	1330.	4.0	27.0	0.4	1650.	7.05
9/22/76	HLS-37.0	1415.	0.0	26.0	2.1	1600.	7.10
9/22/76	HLS-37.0	1415.	1.0	25.8	1.6	1600.	7.00
9/22/76	HLS-37.0	1415.	2.0	25.7	1.4	1600.	7.00

APPENDIX C-6 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
9/22/76	HLS-37.0	1415.	3.0	25.6	1.1	1600.	7.00
9/22/76	HLS-37.0	1415.	4.0	25.6	0.9	1600.	7.00
9/22/76	HLS-37.1	1430.	0.0	26.0	1.6	1700.	7.10
9/22/76	HLS-37.1	1430.	0.0	26.0	1.6	1700.	7.10
9/22/76	HLS-37.1	1430.	0.0	26.0	1.6	1700.	7.10
9/22/76	HLS-37.1	1430.	1.0	26.0	1.5	1700.	7.10
9/22/76	HLS-37.1	1430.	2.0	25.8	1.4	1700.	7.10
9/22/76	HLS-37.1	1430.	3.0	25.6	1.2	1750.	7.10
9/22/76	HLS-37.1	1430.	4.0	25.5	0.9	1750.	7.10
9/22/76	HLS-37.1	1430.	5.0	25.5	0.8	1750.	7.10
11/ 9/76	HLS-37.0	1510.	0.0	20.8	5.8	1100.	7.60
11/ 9/76	HLS-37.0	1510.	1.0	20.0	5.0	1100.	7.60
11/ 9/76	HLS-37.0	1510.	2.0	18.8	4.6	1100.	7.60
11/ 9/76	HLS-37.0	1510.	3.0	18.5	4.6	1100.	7.60
11/ 9/76	HLS-37.0	1510.	4.0	18.5	4.6	1100.	7.60
11/ 9/76	HLS-37.1	1525.	0.0	20.1	5.7	1250.	7.60
11/ 9/76	HLS-37.1	1525.	0.0	20.1	5.7	1250.	7.60
11/ 9/76	HLS-37.1	1525.	0.0	20.1	5.7	1250.	7.70
11/ 9/76	HLS-37.1	1525.	1.0	18.9	5.2	1250.	7.70
11/ 9/76	HLS-37.1	1525.	2.0	18.6	4.9	1250.	7.60
11/ 9/76	HLS-37.1	1525.	3.0	18.5	4.7	1300.	7.60
11/ 9/76	HLS-37.1	1525.	4.0	18.5	4.6	1300.	7.60
11/30/76	HLS-37.0	1330.	0.0	20.8	6.7	720.	7.60
11/30/76	HLS-37.0	1330.	0.0	20.8	6.7	720.	7.60
11/30/76	HLS-37.0	1330.	0.0	20.8	6.7	720.	7.60
11/30/76	HLS-37.0	1330.	1.0	20.8	6.7	720.	7.60
11/30/76	HLS-37.0	1330.	2.0	20.8	6.6	720.	7.60
11/30/76	HLS-37.0	1330.	3.0	20.5	6.1	720.	7.60
11/30/76	HLS-37.0	1330.	4.0	20.2	5.2	720.	7.60
11/30/76	HLS-37.1	1355.	0.0	20.8	6.7	720.	7.70
11/30/76	HLS-37.1	1355.	1.0	20.7	6.6	720.	7.60
11/30/76	HLS-37.1	1355.	2.0	20.7	6.6	720.	7.60
11/30/76	HLS-37.1	1355.	3.0	20.7	6.5	720.	7.60
11/30/76	HLS-37.1	1355.	4.0	20.6	5.7	720.	7.60
2/ 8/77	HLS-37.1	1310.	0.0	17.6		1390.	7.70
2/ 8/77	HLS-37.1	1310.	1.0	17.6		1410.	7.70
2/ 8/77	HLS-37.1	1310.	2.0	17.6		1420.	7.70
2/ 8/77	HLS-37.1	1310.	3.0	17.6		1420.	7.60
2/ 8/77	HLS-37.1	1310.	4.0	17.6		1420.	7.60
2/ 8/77	HLS-37.0	1330.	0.0	17.6		1390.	7.70
2/ 8/77	HLS-37.0	1330.	1.0	17.6		1390.	7.70
2/ 8/77	HLS-37.0	1330.	2.0	17.6		1400.	7.70
2/ 8/77	HLS-37.0	1330.	3.0	17.6		1400.	7.60
2/ 8/77	HLS-37.0	1330.	4.0	17.6		1400.	7.60

APPENDIX C. <u>IN SITU</u> MEASUREMENTS FROM PROFILES IN THE RECEIVING CANALS ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES

7. VEGETABLE FARM # 3

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
6/11/76	UCN-00.4	1130.	0.0	28.1	3.1	1700.	7.30
6/11/76	UCN-00.4	1130.	1.0	27.2	2.2	1800.	7.30
6/11/76	UCN-00.4	1130.	2.0	26.7	2.1	2000.	7.30
6/11/76	UCN-00.4	1130.	3.0	26.5	1.9	2400.	7.30
6/11/76	UCN-00.5	1200.	0.0	27.2	2.4	2200.	7.40
6/11/76	UCN-00.5	1200.	1.0	27.0	2.2	2300.	7.40
6/11/76	UCN-00.5	1200.	2.0	26.8	2.0	2400.	7.30
6/11/76	UCN-01.1	1215.	0.0	28.4	4.3	2200.	7.50
6/11/76	UCN-01.1	1215.	1.0	27.3	2.9	2300.	7.40
6/11/76	UCN-01.1	1215.	2.0	26.4	1.9	2600.	7.40
6/11/76	UCN-01.1	1215.	3.0	26.3	1.7	2650.	7.30
7/ 1/76	UCN-00.5	1115.	0.0	29.2	1.7	2000.	7.30
7/ 1/76	UCN-00.5	1115.	1.0	29.0	1.4	2100.	7.30
7/ 1/76	UCN-00.5	1115.	2.0	29.0	1.4	2200.	7.30
7/ 1/76	UCN-00.5	1115.	3.0	29.0	1.3	2200.	7.30
7/ 1/76	UCN-00.4	1230.	0.0	29.5	1.6	1900.	7.30
7/ 1/76	UCN-00.4	1230.	1.0	29.1	1.6	2000.	7.30
7/ 1/76	UCN-00.4	1230.	2.0	28.8	1.5	2100.	7.30
7/ 1/76	UCN-00.4	1230.	3.0	28.4	1.4	2300.	7.20
7/ 1/76	UCN-00.0	1245.	0.0	29.5	1.8	2200.	7.20
7/ 1/76	UCN-00.0	1245.	1.0	29.3	1.6	2300.	7.20
7/ 1/76	UCN-00.0	1245.	2.0	29.2	1.6	2300.	7.20
7/ 1/76	UCN-00.0	1245.	3.0	29.2	1.5	2400.	7.20
7/29/76	UCN-00.5	1100.	0.0	28.5	3.0	2000.	6.80
7/29/76	UCN-00.5	1100.	1.0	28.1	2.5	2050.	6.90
7/29/76	UCN-00.5	1100.	2.0	27.8	2.1	2050.	6.90
7/29/76	UCN-00.5	1100.	3.0	27.8	1.9	2100.	6.90
7/29/76	UCN-00.4	1030.	0.0	28.2	4.4	1200.	7.00
7/29/76	UCN-00.4	1030.	1.0	27.7	3.2	1400.	6.90
7/29/76	UCN-00.4	1030.	2.0	27.6	2.3	1600.	6.90
7/29/76	UCN-00.4	1030.	3.0	27.4	1.7	1650.	6.90
7/29/76	UCN-00.0	1125.	0.0	28.5	5.1	1300.	6.90
7/29/76	UCN-00.0	1125.	1.0	27.5	2.8	1900.	6.90
7/29/76	UCN-00.0	1125.	2.0	27.3	1.9	2000.	6.80
7/29/76	UCN-00.0	1125.	3.0	27.1	1.5	2100.	6.80
8/24/76	UCN-00.5	1250.	0.0	28.0	1.1	2100.	7.17
8/24/76	UCN-00.5	1250.	1.0	28.0	1.0	2100.	7.17
8/24/76	UCN-00.5	1250.	2.0	28.0	1.0	2100.	7.17
8/24/76	UCN-00.4	1300.	0.0	28.5	1.0	1700.	7.17
8/24/76	UCN-00.4	1300.	1.0	28.0	0.9	1700.	7.17

APPENDIX C-7 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
8/24/76	UCN-00.4	1300.	2.0	28.0	0.9	1800.	7.17
8/24/76	UCN-00.4	1300.	3.0	28.0	0.9	1875.	7.17
8/24/76	UCN-00.0	1310.	0.0	28.5	1.0	2000.	7.20
8/24/76	UCN-00.0	1310.	1.0	28.5	0.9	2000.	7.20
8/24/76	UCN-00.0	1310.	2.0	28.0	0.9	2025.	7.20
8/24/76	UCN-00.0	1310.	3.0	28.0	0.9	2075.	7.20
9/21/76	UCN-00.5	1310.	0.0	26.5	1.0	2300.	7.10
9/21/76	UCN-00.5	1310.	1.0	26.5	0.8	2325.	7.05
9/21/76	UCN-00.5	1310.	2.0	26.0	0.8	2325.	7.05
9/21/76	UCN-00.5	1310.	2.5	26.0	0.7	2325.	7.05
9/21/76	UCN-00.4	1320.	0.0	27.0	1.3	2300.	7.10
9/21/76	UCN-00.4	1320.	1.0	26.5	0.8	2300.	7.10
9/21/76	UCN-00.4	1320.	2.0	26.0	0.8	2300.	7.10
11/10/76	UCN-00.4	1200.	0.0	19.6	5.1	860.	7.40
11/10/76	UCN-00.4	1200.	1.0	19.4	5.0	860.	7.40
11/10/76	UCN-00.4	1200.	2.0	19.2	5.0	860.	7.40
11/10/76	UCN-00.4	1200.	3.0	19.2	4.6	1040.	7.40
11/10/76	UCN-00.4	1200.	4.0	19.4	4.3	1060.	7.30
11/10/76	UCN-00.5	1215.	0.0	19.6	5.1	880.	7.40
11/10/76	UCN-00.5	1215.	1.0	19.6	5.1	900.	7.40
11/10/76	UCN-00.5	1215.	2.0	19.5	4.8	980.	7.40
11/10/76	UCN-00.5	1215.	3.0	19.3	4.5	1040.	7.40
11/10/76	UCN-00.5	1215.	4.0	19.3	4.4	1080.	7.40
12/ 2/76	UCN-00.5	1125.	0.0	20.2	5.9	1000.	7.50
12/ 2/76	UCN-00.5	1125.	1.0	20.2	5.5	1060.	7.40
12/ 2/76	UCN-00.5	1125.	2.0	20.2	5.3	1260.	7.40
12/ 2/76	UCN-00.5	1125.	3.0	20.2	5.1	1340.	7.30
12/ 2/76	UCN-00.4	1140.	0.0	20.2	6.6	1060.	7.50
12/ 2/76	UCN-00.4	1140.	1.0	20.2	5.5	1200.	7.40
12/ 2/76	UCN-00.4	1140.	2.0	20.2	5.2	1320.	7.30
12/ 2/76	UCN-00.4	1140.	3.0	20.2	5.0	1340.	7.30
12/ 2/76	UCN-00.0	1200.	0.0	20.2	7.4	700.	7.70
12/ 2/76	UCN-00.0	1200.	1.0	20.2	7.1	700.	7.70
12/ 2/76	UCN-00.0	1200.	2.0	20.2	5.9	1040.	7.50
12/ 2/76	UCN-00.0	1200.	3.0	19.8	4.9	1180.	7.40
2/ 9/77	UCN-00.4	1130.	0.0	18.4	5.1	1800.	7.50
2/ 9/77	UCN-00.4	1130.	1.0	18.2	4.8	1800.	7.50
2/ 9/77	UCN-00.4	1130.	2.0	18.0	4.5	1800.	7.50
2/ 9/77	UCN-00.4	1130.	3.0	17.8	4.0	1800.	7.50
2/ 9/77	UCN-00.5	1145.	0.0	18.9	4.7	1800.	7.40

APPENDIX C-7 (CONTINUED)

DATE MO/DA/YR	STATION CODE	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
2/ 9/77	UCN-00.5	1145.	1.0	18.1	4.5	1800.	7.40
2/ 9/77	UCN-00.5	1145.	2.0	18.0	4.2	1900.	7.50
2/ 9/77	UCN-00.5	1145.	3.0	17.7	3.7	2000.	7.50
2/ 9/77	UCN-01.1	1200.	0.0	18.2	3.5	2000.	7.50
2/ 9/77	UCN-01.1	1200.	1.0	18.0	3.3	2000.	7.50
2/ 9/77	UCN-01.1	1200.	2.0	17.8	3.2	2000.	7.50
2/ 9/77	UCN-01.1	1200.	3.0	17.7	3.0	2000.	7.50
4/11/77	UCN-00.4	1200.	0.0	22.6	8.0	700.	7.90
4/11/77	UCN-00.4	1200.	1.0	22.5	8.0	700.	7.90
4/11/77	UCN-00.4	1200.	2.0	22.5	7.9	700.	7.90
4/11/77	UCN-00.4	1200.	3.0	22.3	7.8	700.	7.80
4/11/77	UCN-00.5	1225.	0.0	22.5	7.8	700.	7.90
4/11/77	UCN-00.5	1225.	1.0	22.4	7.9	700.	7.90
4/11/77	UCN-00.5	1225.	2.0	22.4	7.9	700.	7.90
4/11/77	UCN-00.5	1225.	3.0	22.3	7.9	700.	7.90
4/11/77	UCN-01.1	1245.	0.0	22.6	8.0	700.	7.90
4/11/77	UCN-01.1	1245.	1.0	22.5	7.9	700.	7.90
4/11/77	UCN-01.1	1245.	2.0	22.5	7.9	700.	7.90
4/11/77	UCN-01.1	1245.	3.0	22.4	7.9	700.	7.90

APPENDIX C. IN SITU MEASUREMENTS FROM PROFILES IN THE RECEIVING CANALS ADJACENT TO THE INTENSIVE AND CHECKPOINT SITES.

8. L-8 CANAL

DATE MO/DA/YR	STATION CODE	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
7/27/76	GS8	815.	0.5	29.0	5.8	680.	7.55
7/27/76	GS8	815.	1.5	29.0	5.1	675.	7.55
9/15/76	GS8	815.	0.5				
11/16/76	GS8	852.	0.5	21.4	4.4	1040.	7.40
11/16/76	GS8	856.	1.5	21.3	4.3	1040.	7.40
1/13/77	GS8	800.	0.5	16.6	4.5	700.	7.82
1/13/77	GS8	802.	1.5	16.6	4.2	738.	7.78
3/15/77	GS8	919.	0.5	23.5	7.0	850.	7.65
3/15/77	GS8	920.	1.5	23.5	6.8	860.	7.60
5/25/77	GS8	850.	0.5	26.6	4.7	1310.	7.52
5/25/77	GS8	854.	1.5	26.6	4.4	1310.	7.49
5/25/77	GS8	857.	2.5	26.6	4.3	1310.	7.49

APPENDIX D

WATER CHEMISTRY DATA FOR PUMP STATIONS S-2, S-3, AND S-4

Nutrient forms: mg N or P/l

$NO_3 = NO_x - NO_2$

Total N = $TKN + NO_x$

Blank indicates missing data

< indicates results less than quoted limits of sensitivity.

APPENDIX D WATER CHEMISTRY DATA FOR PUMP STATIONS

FIELD DATA AT PS-2

DATE MO/DY/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
4/ 5/76	[illegible]	0.0	23.7	5.3	859.	8.07
4/19/76	919.	0.0	22.8	7.8	775.	8.50
5/ 3/76	836.	0.0	25.2	5.3	710.	8.10
5/17/76	834.	0.0	25.8	5.1	1120.	7.55
6/ 1/76	850.	0.0	25.5	2.2	1380.	7.34
6/ 1/76		0.0				
6/14/76	849.	0.0	27.4	3.7	1150.	7.20
6/28/76	840.	0.0	25.3	3.2	1130.	7.20
6/28/76		0.0				
7/12/76	838.	0.0	28.0	1.5	1150.	7.20
7/12/76	838.	2.0	28.0	1.1	1160.	7.10
7/12/76	839.	3.0	28.0	0.9	1165.	7.05
7/12/76		0.0				
7/26/76	922.	0.0	29.0	2.1	1155.	7.45
8/ 9/76	[illegible]	0.0	29.0	1.6	1160.	7.50
8/ 9/76		0.0				
8/23/76	835.	0.0	28.5	1.4		7.15
8/23/76		0.0				
9/ 7/76	837.	0.0	28.6	1.2	1490.	7.09
9/ 7/76		0.0				
9/20/76	924.	0.0	26.6	1.5	1200.	6.89
9/20/76	939.	1.0	26.6	1.0	1250.	6.89
9/20/76	940.	2.0	26.5	0.9	1500.	6.90
9/20/76		0.0				
10/ 4/76	953.	0.0	26.4	3.5	1140.	7.21
10/18/76	957.	0.0	24.8	6.3	995.	8.00
11/ 1/76	929.	0.0	22.2	7.6	830.	8.25
11/15/76	[illegible]	0.0	20.7	6.7	715.	7.78
11/15/76	[illegible]	1.0	20.7	6.7	740.	7.80
11/15/76	900.	2.0	20.7	6.7	750.	7.80
11/29/76	915.	0.0	19.6	6.5	739.	7.70
12/27/76	945.	0.0	14.9	9.1	700.	7.85
12/27/76		0.0				
1/10/77	855.	0.0	18.4	4.6	1110.	7.40
1/10/77	903.	1.0	18.1	4.2	1110.	7.38
1/10/77	904.	2.0	18.1	2.6	1460.	7.26
1/24/77	850.	0.0	13.2	5.9	950.	7.45
1/24/77		0.0				
2/ 7/77	736.	0.0	16.7	6.5	1500.	7.60
2/23/77	1030.	0.0	15.5	8.5		7.80

FIELD DATA AT PS-2 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
3/ 7/77	805.	0.0	20.8	7.7	660.	7.80
3/21/77	722.	0.0	26.2	5.5	780.	7.90
3/21/77	724.	1.0	26.2	5.2	780.	7.19
4/ 4/77	718.	0.0	24.7	7.0	735.	8.00
4/19/77	710.	0.0	24.3	7.5	755.	8.30
5/ 2/77	940.	0.0	23.7	7.6	620.	8.50
5/16/77	914.	0.0	24.0	3.3	710.	7.05
5/16/77	915.	1.0	24.0	2.9	935.	7.00
5/16/77	916.	2.0	23.8	2.0	972.	6.95
5/16/77		0.0				
5/31/77	930.	0.0	27.1	1.9	1500.	
6/13/77	950.	0.0	28.7	4.9	900.	7.40
6/13/77		0.0				
6/27/77	860.	0.0	31.3	6.3	720.	7.80
7/11/77	916.	0.0	29.9	6.1	850.	7.70
7/11/77	916.	0.0	29.9	6.1	850.	7.70
7/11/77	916.	0.0	29.9	6.1	850.	7.70
7/11/77	917.	1.0	29.9	5.3	860.	7.62
7/11/77	918.	2.0	29.7	3.4	900.	7.45
7/11/77		0.0				
7/25/77	908.	0.0	29.4	4.7	940.	7.70
8/ 8/77	952.	0.0	29.4	6.0	361.	8.49
8/ 8/77		0.0				
8/22/77	920.	0.0	29.0	4.1	840.	7.30
8/22/77		0.0				

FIELD DATA AT PS-3

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TEMP DEG C	D.O. MG/L	SP COND UMHOS/CM	PH
4/ 5/76	941.	0.0	23.7	6.4	912.	8.40
4/19/76	955.	0.0	23.3	8.0	780.	8.60
5/ 3/76	914.	0.0	25.5	6.4	735.	8.40
5/17/76	910.	0.0	27.0	5.8	820.	7.75
6/ 1/76	915.	0.0	27.2	5.7	1500.	7.66
6/14/76	920.	0.0	28.0	5.5	1120.	7.40
6/28/76	920.	0.0	26.0	5.3	799.	7.55
7/12/76	910.	0.0	29.7	5.7	910.	7.75
7/12/76	910.	2.0	29.7	5.2	895.	7.65
7/12/76	911.	3.0	29.5	3.9	945.	7.45
7/26/76	905.	0.0	30.0	4.7	1110.	7.90
8/ 9/76	1000.	0.0	29.5	4.3	1105.	7.60
8/23/76	911.	0.0	27.8	2.4		7.00
9/ 7/76	912.	0.0	28.2	3.5	1100.	6.91
9/20/76	1008.	0.0	28.1	3.2	635.	7.08
9/20/76	1024.	1.0	27.7	2.7	675.	7.04
9/20/76	1026.	2.0	27.6	2.8	730.	7.05
9/20/76	1029.	3.0	27.5	2.8	830.	7.08
10/ 4/76	1026.	0.0	26.8	3.0	1120.	7.30
10/18/76	941.	0.0	24.9	7.2	440.	7.85
11/ 1/76	912.	0.0	21.9	7.8	320.	8.05
11/15/76	956.	0.0	21.3	8.1	330.	8.15
11/15/76	956.	1.0	21.0	7.5	380.	8.15
11/15/76	956.	2.0	20.8	7.4	520.	8.12
11/15/76	956.	3.0	20.6	6.8	552.	7.92
11/29/76	951.	0.0	19.9	7.2	712.	8.09
12/27/76	1031.	0.0	15.6	8.1	738.	7.80
1/10/77	934.	0.0	18.3	5.7	900.	7.43
1/10/77	936.	1.0	18.1	5.7	889.	7.48
1/10/77	937.	2.0	18.0	5.7	879.	7.48
1/10/77	938.	3.0	17.8	5.3	886.	7.41
1/24/77	933.	0.0	10.8	8.5	742.	7.80
2/ 7/77	812.	0.0	16.7	8.5	728.	7.78
2/23/77	1110.	0.0	15.8	9.5		8.00
3/ 7/77	843.	0.0	22.0	7.3	710.	7.90
3/21/77	800.	0.0	25.9	4.5	745.	7.80
3/21/77	801.	1.0	25.9	4.1	758.	7.79
3/21/77	802.	2.0	26.0	4.0	763.	7.79
3/21/77	803.	3.0	26.0	3.9	800.	7.78
4/ 4/77	758.	0.0	25.8	7.6	782.	8.30

FIELD DATA AT PS-3 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
4/19/77	753.	0.0	24.4	8.9	760.	8.50
5/ 2/77	1020.	0.0	24.5	8.6	770.	8.60
5/16/77	1002.	0.0	24.4	5.0	690.	7.20
5/16/77	1003.	1.0	24.0	4.3	875.	7.05
5/16/77	1004.	2.0	23.8	3.7	970.	7.00
5/16/77	1005.	3.0	23.8	2.4	1200.	6.88
5/31/77	1000.	0.0	27.8	5.5	950.	
6/13/77	1020.	0.0	29.2	6.4	870.	7.90
6/27/77	920.	0.0	30.9	7.8	840.	7.80
7/11/77	1002.	0.0	30.7	4.9	800.	7.62
7/11/77	1004.	1.0	30.5	4.1	800.	7.58
7/11/77	1005.	2.0	30.2	3.7	830.	7.48
7/11/77	1006.	3.0	29.1	0.5	910.	7.12
7/25/77	943.	0.0	29.5	5.4	780.	7.80
7/25/77	943.	0.0	29.5	5.4	780.	7.80
7/25/77	943.	0.0	29.5	5.4	780.	7.80
8/ 8/77	1033.	0.0	29.8	6.6	371.	8.60
8/22/77	953.	0.0	30.0	8.2	950.	7.79

FIELD DATA AT PS-4

DATE MM/DD/YY	TIME HRS.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH
4/ 5/76	1041.	0.0	25.0	8.8	820.	8.50
[illegible]/76	1042.	0.0	23.3	8.2	1000.	8.30
5/ 3/76	951.	0.0	25.5	5.4	745.	8.20
5/17/76	955.	0.0	26.8	5.7	855.	7.60
6/ 1/76	1000.	0.0	25.8	2.7	1110.	7.31
6/14/76	1010.	0.0	28.0	5.5	880.	7.40
6/28/76	940.	0.0	28.3	9.2	735.	7.95
7/12/76	1003.	0.0	29.7	4.8	782.	7.30
7/26/76	940.	0.0	30.7	6.5	880.	7.70
8/ 9/76	1142.	0.0	28.8	4.0	850.	7.55
8/23/76	955.	0.0	29.2	3.9		7.35
9/ 7/76	1000.	0.0	29.0	2.8	791.	7.09
9/20/76	1104.	0.0	27.9	5.0	420.	7.30
10/ 4/76	1100.	0.0	26.6	1.5	1081.	7.07
10/ 4/76	1100.	0.0				
10/ 4/76	1100.	0.0				
10/18/76	1016.	0.0	25.9	3.5	432.	7.15
11/ 1/76	953.	0.0	22.8	5.0	360.	7.38
11/15/76	1036.	0.0	22.3	7.2	370.	7.35
11/29/76	1024.	0.0	22.1	9.8	758.	8.19
12/27/76	1108.	0.0	16.4	7.2	728.	7.62
1/10/77	1002.	0.0	18.4	6.1	971.	7.30
1/24/77	1010.	0.0	13.2	7.7	845.	7.40
2/ 7/77	848.	0.0	16.7	8.3	882.	7.58
2/23/77	1156.	0.0	17.4	9.0		7.60
3/ 7/77	917.	0.0	24.0	7.6	990.	7.60
3/21/77	838.	0.0	26.5	6.6	840.	7.72
4/ 4/77	834.	0.0	25.3	6.8	672.	7.90
4/19/77	829.	0.0	24.8	8.1	728.	8.25
5/ 2/77	1106.	0.0	24.6	6.7	790.	8.40
5/16/77	1039.	0.0	25.8	5.3	650.	7.30
5/31/77	1030.	0.0				
6/13/77	1115.	0.0	30.2	6.9	1400.	7.20
6/27/77	950.	0.0	30.4	5.1	720.	7.50
7/11/77	1041.	0.0	31.1	9.6	740.	8.00
7/25/77	1032.	0.0	30.5	9.0	760.	7.90
8/ 9/77	1108.	0.0	31.0	8.5	429.	7.69
8/22/77	1044.	0.0	30.5	5.5	890.	7.35
8/22/77	1044.	0.0	30.5	5.5	890.	7.35
8/22/77	1044.	0.0	30.5	5.5	890.	7.35

APPENDIX D. WATER CHEMISTRY DATA FOR PUMP STATIONS

ANALYTICAL DATA AT PUMP STATION 2

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L		NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/ 5/76	902.	0.0	0.052		0.006	0.046	0.01	2.31
4/19/76	913.	0.0	0.065	<	0.004	0.061	0.03	1.44
5/ 3/76	836.	0.0	0.223		0.007	0.216	0.11	1.43
5/17/76	834.	0.0	2.177				0.42	3.02
6/ 1/76	850.	0.0	2.377		0.099	2.278	0.01	3.00
6/ 1/76		0.0	0.482		0.004	0.478	0.45	0.94
6/14/76	849.	0.0	1.198		0.114	1.084	0.32	3.39
6/28/76	840.	0.0	0.428		0.041	0.387	0.30	3.09
6/28/76		0.0	0.215	<	0.004	0.211	0.20	0.48
7/12/76	838.	0.0	0.949		0.190	0.759	0.59	3.90
7/12/76	838.	2.0						
7/12/76	839.	3.0						
7/12/76		0.0	0.225	<	0.004	0.221	0.21	0.65
7/26/76	822.	0.0	0.897		0.063	0.834	0.72	3.44
8/ 9/76	920.	0.0	1.358		0.109	1.249	0.95	5.47
8/ 9/76		0.0	0.332		0.004	0.328	0.31	1.11
8/23/76	830.	0.0	2.774		2.661	0.113	0.80	4.74
8/23/76		0.0	0.364		0.276	0.088	0.18	0.37
9/ 7/76	837.	0.0	1.208		0.203	1.005	0.33	3.85
9/ 7/76		0.0	0.242	<	0.004	0.238	0.15	0.57
9/20/76	924.	0.0	1.073		0.086	0.987	0.94	4.12
9/20/76	939.	1.0						
9/20/76	940.	2.0						
9/20/76		0.0	0.207	<	0.004	0.203	0.11	0.42
10/ 4/76	953.	0.0	0.504		0.088	0.416	0.28	1.63
10/18/76	857.	0.0	0.094		0.006	0.088	0.04	2.81
11/ 1/76	829.	0.0	0.092		0.006	0.086	0.04	2.01
11/15/76	900.	0.0	0.066		0.007	0.059	0.11	1.58
11/15/76	900.	1.0						
11/15/76	900.	2.0						
11/29/76	915.	0.0	0.039		0.005	0.034	0.09	1.99
12/[illegible]/76	946.	0.0	0.132		0.008	0.124	0.05	2.16
12/27/76		0.0	0.342		0.007	0.335	0.55	1.48
1/[illegible]/77	855.	0.0	0.497		0.040	0.457	0.31	2.40
1/[illegible]/77	903.	1.0						
1/[illegible]/77	904.	2.0						
1/24/77	851.	0.0	4.0[illegible]		.167	3.863	0.45	3.62
1/24/77		0.0	0.130	<	0.004	0.126	0.25	1.12
2/ 7/77	756.	0.0	[illegible].026		0.078	1.948	0.21	3.75
[illegible]/77	[illegible]	[illegible]	[illegible]		[illegible]	0.212	0.06	

ANALYTICAL DATA AT S-2 (CONTINUED)

DATE MO/DY/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
3/ 7/77	8[illegible].	0.0	0.447	< 0.004	0.443	0.17	2.12
3/21/77	720.	0.0	0.1[illegible]	0.007	0.094	0.14	2.11
3/21/77	724.	1.0					
4/ 4/77	718.	0.0	0.487	0.005	0.482	0.03	1.86
4/19/77	71[illegible].	0.0	0.091	< 0.004	0.087	0.04	2.52
5/ 2/77	940.	0.0	0.016	< 0.004	0.012	0.03	1.74
5/16/77	914.	0.0	3.772	0.187	3.585	0.76	3.80
5/16/77	915.	1.0					
5/16/77	916.	2.0					
5/16/77		0.0	0.452	0.008	0.444	0.33	0.96
5/31/77	930.	0.0	2.870	0.110	2.760	3.03	3.58
6/13/77	950.	0.0	0.354	0.095	0.259	0.14	3.01
6/13/77		0.0	0.462	0.017	0.445	0.38	0.91
6/27/77	850.	0.0	0.025	< 0.004	0.021	0.02	1.63
7/11/77	916.	0.0	0.158	0.049	0.109	0.16	2.22
7/11/77	916.	0.0	0.142	0.032	0.110	0.16	2.08
7/11/77	916.	0.0	0.141	0.031	0.110	0.15	2.33
7/11/77	917.	1.0					
7/11/77	918.	2.0					
7/11/77		0.0	0.445	< 0.004	0.441	0.28	0.81
7/25/77	908.	0.0	0.075	0.015	0.060	0.18	2.21
8/ 8/77	952.	0.0	0.045	0.007	0.038	0.05	2.38
8/ 8/77		0.0	0.411	< 0.004	0.407	0.23	1.29
8/22/77	920.	0.0	1.432	0.143	1.289	0.47	3.51
8/22/77		0.0	0.159	< 0.004	0.155	0.03	0.45

ANALYTICAL DATA AT S-2 (CONTINUED)

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/ 5/76	902.	0.0	0.008	0.052		118.8	3.71
4/19/76	913.	0.0	< 0.002	0.027		111.4	3.10
5/ 3/76	836.	0.0	0.046	0.057		96.3	2.86
5/17/76	834.	0.0	0.073	0.098		148.5	5.01
6/ 1/76	850.	0.0	0.043	0.052		157.4	7.03
6/ 1/76		0.0	0.047	0.071			
6/14/76	849.	0.0	0.039	0.053		159.1	
6/28/76	840.	0.0	0.065	0.084		179.6	5.62
6/28/76		0.0	0.022	0.030		< 4.0	0.08
7/12/76	838.	0.0	0.090	0.144	142.8	168.3	6.92
7/12/76	838.	2.0					
7/12/76	839.	3.0					
7/12/76		0.0	0.077	0.099		< 4.0	< 0.07
7/26/76	822.	0.0	0.054	0.083		206.0	7.40
8/ 9/76	920.	0.0	0.097	0.248		206.5	8.36
8/ 9/76		0.0	0.039	0.044		< 4.0	0.24
8/23/76	830.	0.0	0.078	0.178	157.7	167.1	9.41
8/23/76		0.0	0.016	0.295	< 5.0	< 4.0	< 0.07
9/ 7/76	837.	0.0	0.073	0.092	154.4	197.0	8.51
9/ 7/76		0.0	0.028	0.043	< 5.0	< 4.0	0.21
9/20/76	924.	0.0	0.072	0.089	129.6	199.8	9.67
9/20/76	939.	1.0					
9/20/76	940.	2.0					
9/20/76		0.0	0.025	0.027	< 5.0	< 4.0	< 0.07
10/ 4/76	953.	0.0	0.034	0.058	122.8	182.4	9.02
10/18/76	857.	0.0	< 0.002	0.038	86.9	133.2	4.78
11/ 1/76	829.	0.0	< 0.002	0.029	80.0	113.5	3.84
11/15/76	900.	0.0	0.013	0.050	67.6	106.4	3.43
11/15/76	900.	1.0					
11/15/76	90[illegible].	2.0					
11/29/76	915.	0.0	< 0.002	0.037	63.5	100.6	4.30
12/27/76	945.	0.0	0.002	0.095	66.2	104.6	3.13
12/27/76		0.0			< 5.0	9.7	0.20
1/10/77	855.	0.0	0.047	0.055	71.4	162.1	4.71
1/[illegible]/77	9[illegible].	1.0					
1/[illegible]/77	9[illegible].	2.0					
[illegible]/77	8[illegible].	0.0	0.1[illegible]	0.080	13[illegible]	153.3	7.58
[illegible]/77		0.0	0.051	0.072	< 5.0	8.5	< 0.07
[illegible]/77	736.	0.0	0.068	0.091	112.9	226.1	7.49
[illegible]/77	[illegible]	0.0	0.02[illegible]		55.[illegible]	105.6	3.19

ANALYTICAL DATA AT S-2 (CONTINUED)

DATE MO/DY/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
3/ 7/77	835.	0.0	0.055	0.085	63.1	98.4	2.79
3/21/77	722.	0.0	0.024	0.049	56.7	99.1	2.88
3/21/77	724.	1.0					
4/ 4/77	718.	0.0	0.036	0.082	59.3	94.4	2.67
4/19/77	710.	0.0	0.003	0.055	46.1	106.2	3.13
5/ 2/77	940.	0.0	0.010	0.036	50.9	103.0	2.80
5/16/77	914.	0.0	0.081	0.143	104.4	121.2	6.05
5/16/77	915.	1.0					
5/16/77	916.	2.0					
5/16/77		0.0	0.076	0.171	7.7	7.7	0.28
5/31/77	930.	0.0	0.031	0.096	110.3	170.2	1.22
6/13/77	950.	0.0	0.030	0.067	68.2	130.5	4.82
6/13/77		0.0	0.102	0.162	9.6	13.9	< 0.10
6/27/77	850.	0.0	0.006	0.066	57.0	104.3	2.85
7/11/77	916.	0.0	0.009	0.062	88.7	127.0	3.45
7/11/77	916.	0.0	0.012	0.064	86.3	126.8	3.45
7/11/77	916.	0.0	0.005	0.064	84.2	126.8	3.45
7/11/77	917.	1.0					
7/11/77	918.	2.0					
7/11/77		0.0	0.091	0.109	66.4	5.6	< 0.10
7/25/77	908.	0.0	0.034	0.074	98.5	138.4	3.31
8/ 8/77	952.	0.0	< 0.002	0.044	65.3	120.6	1.81
8/ 8/77		0.0	0.065	0.074	9.1	< 4.0	< 0.10
8/22/77	920.	0.0	0.066	0.094	141.6	161.9	5.87
8/22/77		0.0	0.011	0.014	5.3	< 4.0	< 0.10

ANALYTICAL DATA AT S-2 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS		NA MG/L	K MG/L		CA MG/L		MG MG/L
4/ 5/76	902.	0.0		88.58	5.69		60.08		26.42
4/19/76	913.	0.0		83.82			51.12		23.49
5/ 3/76	836.	0.0		61.39	4.88		47.78		20.00
5/17/76	834.	0.0		110.46	6.39		84.44		30.41
6/ 1/76	850.	0.0		112.11	6.42		113.64		35.29
6/ 1/76		0.0		2.65	0.43	<	3.02	<	0.80
6/14/76	849.	0.0		115.83			138.77		43.98
6/28/76	840.	0.0		123.83			78.77		38.77
6/28/76		0.0	<	3.02	0.11	<	3.06	<	0.82
7/12/76	838.	0.0		119.56			128.54		44.47
7/12/76	838.	2.0							
7/12/76	839.	3.0							
7/12/76		0.0	<	1.03	0.14	<	3.06	<	0.21
7/26/76	822.	0.0		140.95			162.78		37.16
8/ 9/76	920.	0.0		151.84	19.37		96.28		49.49
8/ 9/76		0.0	<	1.02	0.23	<	1.01	<	0.21
8/23/76	830.	0.0		122.74	7.91		154.48		54.95
8/23/76		0.0	<	1.03	0.36		1.40	<	0.20
9/ 7/76	837.	0.0		139.31	8.99		135.15		59.91
9/ 7/76		0.0	<	1.00	0.28		1.39	<	0.20
9/20/76	924.	0.0		134.57	9.05		132.21		54.74
9/20/76	939.	1.0							
9/20/76	940.	2.0							
9/20/76		0.0	<	1.01	0.25	<	3.03	<	0.20
10/ 4/76	953.	0.0		124.42	7.63		123.63		52.45
10/18/76	857.	0.0		89.96	6.18		73.70		30.69
11/ 1/76	829.	0.0		76.17	6.71		53.27		24.37
11/15/76	900.	0.0		72.59	6.07		54.66		22.40
11/15/76	900.	1.0							
11/15/76	900.	2.0							
11/29/76	915.	0.0		70.19	6.21		51.93		22.19
12/27/76	945.	0.0		66.81	6.31		48.67		20.43
12/27/76		0.0	<	2.95	1.06	<	2.97	<	0.77
1/10/77	855.	0.0		107.94	7.99		77.64		30.84
1/10/77	903.	1.0							
1/10/77	904.	2.0							
1/24/77	850.	0.0		107.56	8.47		112.12		41.95
1/24/77		0.0	<	2.91	0.49	<	2.90	<	0.80
2/ 7/77	736.	0.0		150.04	21.32		169.46		41.51
2/23/77	1030.	0.0		68.66	6.68		54.08		21.57

ANALYTICAL DATA AT S-2 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CL MG/L	MG MG/L
3/ 7/77	865.	0.0	61.96	6.48	50.04	19.98
3/[illegible]/77	722.	0.0	57.4[illegible]	3.9[illegible]	61.62	19.72
3/21/77	724.	1.0				
4/ 4/77	718.	0.0	63.35	5.67	47.18	20.53
4/19/77	710.	0.0	65.61	4.29	55.59	22.84
5/ 2/77	940.	0.0	68.57	6.64	53.11	21.46
5/16/77	914.	0.0	75.88	7.15	117.20	39.78
5/16/77	915.	1.0				
5/16/77	916.	2.0				
5/16/77		0.0	< 2.93	0.31	< 3.05	< 0.84
5/31/77	930.	0.0	126.44	8.01	98.41	35.93
6/13/77	960.	0.0	94.61	5.14	80.53	31.13
6/13/77		0.0	< 2.86	0.22	< 2.93	< 0.80
6/27/77	850.	0.0	69.71	4.57	49.50	19.71
7/11/77	916.	0.0	86.59	5.28	42.37	26.89
7/11/77	916.	0.0	89.89	5.42	43.27	27.10
7/11/77	916.	0.0	89.57	5.40	43.79	26.72
7/11/77	917.	1.0				
7/11/77	918.	2.0				
7/11/77		0.0	< 3.00	0.30	< 2.97	< 0.76
7/25/77	908.	0.0	98.71	6.55	54.98	28.55
8/ 8/77	952.	0.0	76.43	5.40	70.54	20.00
8/ 8/77		0.0	< 3.05	1.72	< 3.09	< 0.79
8/22/77	920.	0.0	120.85	7.40	99.69	40.65
8/22/77		0.0	< 2.97	0.38	< 2.90	< 0.80

ANALYTICAL DATA AT S-2 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/ 5/76	902.	0.0			
4/19/76	913.	0.0			
5/ 3/76	836.	0.0			
5/17/76	834.	0.0			
6/ 1/76	850.	0.0			
6/ 1/76		0.0			
6/14/76	849.	0.0			
6/28/76	840.	0.0			
6/28/76		0.0			
7/12/76	838.	0.0	2.8		
7/12/76	838.	2.0			
7/12/76	839.	3.0			
7/12/76		0.0			
7/26/76	822.	0.0			
8/ 9/76	920.	0.0			
8/ 9/76		5.0			
8/23/76	830.	0.0	1.6	3.0	
8/23/76		0.0	0.4		
9/ 7/76	837.	0.0	1.5	8.0	0.20
9/ 7/76		0.0			
9/20/76	924.	0.0	3.2	8.0	
9/20/76	939.	1.0			
9/20/76	94[illegible].	2.0			
9/20/76		0.0			
10/ 4/76	953.	0.0	1.8		
10/18/76	857.	0.0	17.5		0.13
11/ 1/76	829.	0.0	14.0		0.16
11/15/76	900.	0.0	3.1	14.0	0.09
11/15/76	9[illegible].	1.0			
11/15/76	9[illegible].	2.0			
11/29/76	[illegible].	0.0	2.7	12.0	
12/27/76	9[illegible].	0.0	25.0		0.24
12/27/76		0.0	1.5		0.06
[illegible]/77	[illegible].	0.0	4.8		
[illegible]/77	903.	1.0			
[illegible]/77	9[illegible].	2.0			
[illegible]/77	85[illegible].	0.0	4.4	12.0	0.11
[illegible]/77		0.0	[illegible]		< 0.02
[illegible]/ 7/77	7[illegible].	0.0	5.5	15.0	0.11
[illegible]/77	10[illegible].	[illegible]			

D-13

ANALYTICAL DATA AT S-2 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L		TOTAL FE MG/L
3/ 7/77	805.	0.0	11.0	31.0		0.41
3/21/77	722.	0.0	7.0	13.0		0.07
3/21/77	724.	1.0				
4/ 4/77	718.	0.0	13.0	21.0		0.19
4/19/77	710.	0.0	6.0	3.1		0.12
5/ 2/77	940.	0.0	5.8	14.4		0.05
5/16/77	914.	0.0	2.4	5.0		0.12
5/16/77	915.	1.0				
5/16/77	916.	2.0				
5/16/77		0.0	4.5	5.0	<	0.02
5/31/77	930.	0.0	3.3	11.0		0.12
6/13/77	950.	0.0	2.3	9.0		0.16
6/13/77		0.0	0.7	8.0		0.16
6/27/77	850.	0.0	4.5			0.06
7/11/77	916.	0.0		9.0		0.04
7/11/77	915.	0.0		7.0		0.05
7/11/77	916.	0.0		1.0		0.03
7/11/77	917.	1.0				
7/11/77	918.	2.0				
7/11/77		0.0			<	0.02
7/25/77	908.	0.0	6.0	1.0		0.05
8/ 8/77	952.	0.0	4.0			0.03
8/ 8/77		0.0	1.9	2.0	<	0.02
8/22/77	920.	0.0	1.5	14.0		0.59
8/22/77		0.0	1.0	4.0		0.35

ANALYTICAL DATA AT PUMP STATION 3

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/ 5/76	941.	0.0	0.017	< 0.004	0.013	0.01	2.17
4/19/76	952.	0.0	0.012	< 0.004	0.008	0.02	1.55
5/ 3/76	914.	0.0	0.028	0.005	0.023	0.15	1.55
5/17/76	910.	0.0				0.27	2.01
6/ 1/76	915.	0.0	3.137	0.246	2.891	0.30	3.15
6/14/76	920.	0.0	1.174	0.063	1.111	0.16	2.98
6/28/76	920.	0.0	0.201	0.021	0.180	0.12	2.34
7/12/76	910.	0.0	0.416	0.040	0.376	0.11	2.21
7/12/76	910.	2.0					
7/12/76	911.	3.0					
7/26/76	905.	0.0	0.131	0.021	0.110	0.15	2.35
8/ 9/76	1000.	0.0	0.632	0.045	0.587	0.15	2.46
8/23/76	911.	0.0	4.625	4.429	0.196	0.55	4.19
9/ 7/76	912.	0.0	3.098	0.065	3.033	0.16	3.55
9/20/76	1008.	0.0	2.313	0.109	2.204	0.29	3.35
9/20/76	1024.	1.0					
9/20/76	1026.	2.0					
9/20/76	1028.	3.0					
10/ 4/76	1026.	0.0	0.610	0.062	0.548	0.17	1.32
10/18/76	941.	0.0	0.111	0.004	0.107	0.02	1.92
11/ 1/76	912.	0.0	0.073	0.004	0.069	0.03	1.73
11/15/76	956.	0.0	< 0.008	0.004	< 0.008	0.01	1.72
11/15/76	956.	1.0					
11/15/76	956.	2.0					
11/15/76	956.	3.0					
11/29/76	951.	0.0	0.009	< 0.004	< 0.008	0.04	2.61
12/27/76	1031.	0.0	0.051	0.008	0.043	0.14	2.32
1/10/77	934.	0.0	0.222	0.026	0.197	0.35	
1/10/77	936.	1.0					
1/10/77	937.	2.0					
1/10/77	938.	3.0					
1/24/77	933.	0.0	0.551	0.015	0.536	0.18	2.45
2/ 7/77	812.	0.0	0.728	0.026	0.702	0.19	2.16
2/22/77	1110.	0.0	0.210	< 0.004	0.206	0.05	
3/ 7/77	843.	0.0	0.147	< 0.004	0.143	0.10	1.72
3/21/77	800.	0.0	0.091	0.009	0.082	0.16	2.06
3/21/77	801.	1.0					
3/21/77	802.	2.0					
3/21/77	803.	3.0					
4/ 4/77	758.	0.0	0.033	< 0.004	0.029	0.03	1.86

ANALYTICAL DATA AT S-3 (CONTINUED)

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/19/77	743.	0.0	0.026	< 0.004	0.016	0.02	2.26
5/ 2/77	1020.	0.0	0.011	< 0.004	< 0.006	0.02	1.50
5/15/77	1002.	0.0	0.776	.135	0.641	0.52	2.91
5/16/77	1003.	1.0					
5/16/77	1004.	2.0					
5/16/77	1005.	3.0					
5/31/77	1000.	0.0	1.695	0.085	1.610	0.12	1.93
6/13/77	1020.	0.0	0.183	0.024	0.159	0.08	2.43
6/27/77	920.	0.0	0.036	0.011	0.025	0.05	1.62
7/11/77	1002.	0.0	0.043	0.011	0.032	0.16	1.77
7/11/77	1004.	1.0					
7/11/77	1005.	2.0					
7/11/77	1006.	3.0					
7/25/77	943.	0.0	0.333	0.033	0.300	0.15	1.73
7/25/77	943.	0.0	0.324	0.033	0.291	0.16	2.00
7/25/77	943.	0.0	0.324	0.033	0.291	0.16	1.91
8/ 8/77	1033.	0.0	0.066	0.009	0.057	0.05	2.28
8/22/77	953.	0.0	0.816	0.104	0.712	0.12	2.96

ANALYTICAL DATA AT S-3 (CONTINUED)

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/ 5/76	941.	0.0	< 0.002	0.037		125.2	3.97
4/19/76	952.	0.0	< 0.002	0.020		111.6	3.12
5/ 3/76	914.	0.0	0.003	0.024		106.6	2.76
5/17/76	910.	0.0	0.061	0.084		115.3	3.26
6/ 1/76	915.	0.0	0.033	0.063		149.2	6.75
6/14/76	920.	0.0	0.017	0.028		130.0	6.82
6/28/76	920.	0.0	0.012	0.046		114.1	3.46
7/12/76	910.	0.0	0.014	0.044	82.8	119.5	4.41
7/12/76	910.	2.0					
7/12/76	911.	3.0					
7/26/76	905.	0.0	0.022	0.043		138.9	4.63
8/ 9/76	1000.	0.0	0.016	0.047		128.7	4.28
8/23/76	911.	0.0	0.052	0.082	109.5	104.0	6.83
9/ 7/76	912.	0.0	0.037	0.051	83.4	111.1	7.44
9/20/76	1008.	0.0	0.051	0.054	107.6	144.4	8.40
9/20/76	1024.	1.0					
9/20/76	1026.	2.0					
9/20/76	1028.	3.0					
10/ 4/76	1026.	0.0	0.039	0.057	102.5	149.5	7.31
10/18/76	941.	0.0	< 0.002	0.031	84.4	122.8	4.40
11/ 1/76	912.	0.0	< 0.002	0.027	78.7	114.0	3.53
11/15/76	956.	0.0	0.007	0.050	64.5	103.6	3.16
11/15/76	956.	1.0					
11/15/76	956.	2.0					
11/15/76	956.	3.0					
11/29/76	951.	0.0	< 0.002	0.045	63.8	100.4	3.91
12/27/76	1031.	0.0	< 0.002	0.066	68.0	103.0	3.48
1/10/77	934.	0.0	0.003		66.6	143.6	3.66
1/10/77	936.	1.0					
1/10/77	937.	2.0					
1/10/77	938.	3.0					
1/24/77	933.	0.0	< 0.002	0.043	70.1	106.2	3.42
2/ 7/77	812.	0.0	0.006	0.049	80.4	110.6	3.93
2/23/77	1110.	0.0	< 0.002		64.0	100.5	3.08
3/ 7/77	843.	0.0	0.012	0.047	61.8	100.4	2.96
3/21/77	850.	0.0	0.007	0.034	56.6	99.1	3.26
3/21/77	851.	1.0					
3/21/77	852.	2.0					
3/21/77	853.	3.0					
4/ 4/77	[illegible]	0.0	< [illegible]	0.038	60.3	100.5	3.51

ANALYTICAL DATA AT S-3 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS		O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/19/77	753.	0.0		0.003	0.061	49.0	107.4	3.15
5/ 2/77	1020.	0.0		0.002	0.032	59.9	100.6	2.71
5/16/77	1002.	0.0		0.092	0.160	84.4	113.1	4.01
5/16/77	1003.	1.0						
5/16/77	1004.	2.0						
5/16/77	1005.	3.0						
5/31/77	1000.	0.0		0.006	0.005	72.6	112.8	3.46
6/13/77	1020.	0.0		0.012	0.048	72.3	125.5	3.54
6/27/77	926.	0.0		0.005	0.064	68.7	120.5	3.33
7/11/77	1002.	0.0	<	0.002	0.040	73.8	116.8	2.62
7/11/77	1004.	1.0						
7/11/77	1005.	2.0						
7/11/77	1006.	3.0						
7/25/77	943.	0.0		0.005	0.039	79.9	117.3	2.46
7/25/77	943.	0.0		0.003	0.028	80.3	118.9	2.48
7/25/77	943.	0.0	<	0.002	0.025	77.9	117.1	2.53
8/ 8/77	1033.	0.0	<	0.002	0.023	67.3	124.4	1.98
8/22/77	953.	0.0		0.035	0.117	84.5	133.7	4.34

ANALYTICAL DATA AT S-3 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/ 5/76	941.	0.0	93.87	5.87	63.85	28.34
4/19/76	952.	0.0	80.68		50.82	22.95
5/ 3/76	914.	0.0	66.20	5.24	45.87	21.59
5/17/76	910.	0.0	76.87	6.41	59.61	19.75
6/ 1/76	915.	0.0	59.91	7.38	122.25	37.96
6/14/76	920.	0.0	87.70		129.82	32.45
6/28/76	920.	0.0	73.72		57.31	24.79
7/12/76	910.	0.0	82.42		68.05	26.28
7/12/76	910.	2.0				
7/12/76	911.	3.0				
7/26/76	905.	0.0	97.38		70.19	31.08
8/ 9/76	1000.	0.0	87.22	6.26	58.16	30.23
8/23/76	911.	0.0	67.83	5.21	140.65	29.26
9/ 7/76	912.	0.0	70.60	5.53	128.59	24.52
9/20/76	1008.	0.0	89.85	6.64	136.22	34.06
9/20/76	1024.	1.0				
9/20/76	1026.	2.0				
9/20/76	1028.	3.0				
10/ 4/76	1026.	0.0	100.62	7.19	113.49	37.49
10/18/76	941.	0.0	79.70	5.68	64.26	27.44
11/ 1/76	912.	0.0	74.24	6.48	48.34	23.79
11/15/76	956.	0.0	63.83	5.68	50.35	21.47
11/15/76	956.	1.0				
11/15/76	956.	2.0				
11/15/76	956.	3.0				
11/29/76	951.	0.0	68.60	5.99	50.14	21.32
12/27/76	1031.	0.0	70.39	5.61	49.68	20.80
1/10/77	934.	0.0	90.40	6.35	68.33	25.85
1/10/77	936.	1.0				
1/10/77	937.	2.0				
1/10/77	938.	3.0				
1/24/77	933.	0.0	71.37	5.89	61.45	22.19
2/ 7/77	612.	0.0	74.35	12.19	68.35	23.46
2/22/77	1110.	0.0	64.01	6.49	54.44	20.99
3/ 7/77	843.	0.0	62.43	6.36	53.56	20.32
3/21/77	850.	0.0	50.30	4.02	60.60	21.55
3/21/77	851.	1.0				
3/21/77	852.	2.0				
3/21/77	853.	3.0				
4/ 5/77	758.	0.0	56.57	6.25	55.16	22.44

ANALYTICAL DATA AT S-3 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/19/77	753.	0.0	69.19	4.21	54.37	22.12
5/ 2/77	1020.	0.0	65.27	5.56	51.74	20.98
5/16/77	1002.	0.0	66.17	7.33	90.51	25.32
5/16/77	1003.	1.0				
5/16/77	1004.	2.0				
5/16/77	1005.	3.0				
5/31/77	1000.	0.0	79.95	6.03	69.14	24.47
6/13/77	1020.	0.0	92.74	4.92	59.59	25.61
6/27/77	925.	0.0	84.57	4.88	51.08	25.50
7/11/77	1002.	0.0	81.87	5.24	33.22	24.10
7/11/77	1004.	1.0				
7/11/77	1005.	2.0				
7/11/77	1006.	3.0				
7/25/77	943.	0.0	91.74	5.32	44.68	23.06
7/25/77	943.	0.0	91.43	5.35	44.69	22.18
7/25/77	943.	0.0	91.58	5.47	45.02	21.84
8/ 8/77	1033.	0.0	79.83	5.40	22.31	21.07
8/22/77	953.	0.0	91.38	6.19	81.86	26.31

ANALYTICAL DATA AT S-3 (CONTINUED)

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/ 5/76	941.	0.0			
4/19/76	952.	0.0			
5/ 3/76	914.	0.0			
5/17/76	910.	0.0			
6/ 1/76	915.	0.0			
6/14/76	920.	0.0			
6/28/76	920.	0.0			
7/12/76	910.	0.0	1.9		
7/12/76	910.	2.0			
7/12/76	911.	3.0			
7/26/76	905.	0.0			
8/ 9/76	1000.	0.0			
8/23/76	911.	0.0	18.0	95.1	
9/ 7/76	912.	0.0	1.6	17.0	0.26
9/20/76	1008.	0.0	1.8	10.0	
9/20/76	1024.	1.0			
9/20/76	1026.	2.0			
9/20/76	1028.	3.0			
10/ 4/76	1026.	0.0	1.4		
10/18/76	941.	0.0	11.5		0.05
11/ 1/76	912.	0.0	9.8		0.09
11/15/76	956.	0.0	3.2	15.0	0.06
11/15/76	956.	1.0			
11/15/76	956.	2.0			
11/15/76	956.	3.0			
11/29/76	951.	0.0	6.8	14.0	
12/27/76	1031.	0.0	6.2		0.05
1/10/77	934.	0.0	2.2		
1/10/77	936.	1.0			
1/10/77	937.	2.0			
1/10/77	938.	3.0			
1/24/77	933.	0.0	7.8	13.0	0.07
2/ 7/77	812.	0.0	8.7	13.0	0.10
2/23/77	1115.	0.0			
3/ 7/77	843.	0.0	5.5	13.0	0.13
3/21/77	[illegible]	0.0	6.1	2.0	[illegible]
3/21/77	[illegible]	1.0			
3/21/77	842.	2.0			
3/21/77	[illegible]	3.0			
4/ 5/77	758.	0.0	[illegible]	11.0	[illegible]

ANALYTICAL DATA AT S-3 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SO MG/L	TOTAL FE MG/L
4/19/77	953.	0.0	2.8	22.0	0.23
5/ 2/77	1120.	0.0	4.4	19.0	0.04
5/16/77	1002.	0.0	2.2	8.0	0.09
5/16/77	1003.	1.0			
5/16/77	1004.	2.0			
5/16/77	1005.	3.0			
5/31/77	1000.	0.0	0.9	3.0	0.03
6/13/77	1020.	0.0	1.2	11.0	0.15
6/27/77	920.	0.0	2.2		0.06
7/11/77	1002.	0.0		4.0	< 0.02
7/11/77	1004.	1.0			
7/11/77	1005.	2.0			
7/11/77	1006.	3.0			
7/25/77	943.	0.0	2.7	4.0	< 0.02
7/25/77	943.	0.0	2.5	4.0	< 0.02
7/25/77	943.	0.0	3.2	2.0	0.13
8/ 8/77	1033.	0.0	1.6		0.08
8/22/77	953.	0.0	1.4	10.0	0.38

ANALYTICAL DATA AT PUMP STATION 4

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/ 5/76	1041.	0.0	1.379	< 0.004	1.375	0.07	1.80
4/19/76	1042.	0.0	0.006	< 0.004	< 0.004	< 0.01	1.73
5/ 3/76	951.	0.0	0.013	0.004	0.009	0.01	1.49
5/17/76	950.	0.0	0.361			0.12	1.90
6/ 1/76	1000.	0.0		0.076		0.23	2.40
6/14/76	1010.	0.0	0.357	0.076	0.281	0.08	2.15
6/28/76	940.	0.0	0.095	< 0.004	0.091	0.02	1.87
7/12/76	1003.	0.0	0.438	0.029	0.409	0.13	1.90
7/26/76	940.	0.0	0.270	0.025	0.245	0.03	2.18
8/ 9/76	1042.	0.0	0.035	0.006	0.029	0.07	2.34
8/23/76	955.	0.0	0.184	0.053	0.131	0.53	2.41
9/ 7/76	1000.	0.0	0.058	0.015	0.043	0.14	1.97
9/20/76	1104.	0.0	0.216	0.098	0.118	0.44	2.57
10/ 4/76	1100.	0.0	0.188	0.029	0.159	0.35	1.94
10/ 4/76	1100.	0.0					
10/ 4/76	1100.	0.0					
10/18/76	1016.	0.0	0.366	0.025	0.341	0.25	1.96
11/ 1/76	953.	0.0	0.071	0.015	0.056	0.11	1.75
11/15/76	1036.	0.0	0.301	0.012	0.289	0.18	1.68
11/29/76	1024.	0.0	< 0.008	< 0.004	< 0.008	< 0.01	2.20
12/27/76	1108.	0.0	0.139	0.013	0.126	0.14	1.29
1/10/77	1052.	0.0	0.292	0.022	0.270	0.05	2.17
1/24/77	1010.	0.0	0.367	0.034	0.333	0.23	2.24
2/ 7/77	848.	0.0	0.675	0.039	0.636	0.13	2.07
2/23/77	1157.	0.0	0.331	0.021	0.310	0.04	
3/ 7/77	917.	0.0	0.602	0.038	0.564	0.19	2.58
3/21/77	838.	0.0	0.163	0.033	0.130	0.11	2.50
4/ 4/77	834.	0.0	0.086	0.005	0.081	0.02	2.45
4/19/77	829.	0.0	< 0.008	< 0.004	< 0.008	0.02	1.35
5/ 2/77	[illegible]	0.0	< 0.004	< 0.004	< 0.004	< 0.01	1.66
5/16/77	[illegible]	0.0	0.595	0.059	0.536	0.68	3.26
5/31/77	1030.	0.0					
6/13/77	1115.	0.0	0.423	0.101	0.322	0.05	3.28
6/27/77	951.	0.0	0.012	< 0.004	0.008	0.02	1.52
7/11/77	1041.	0.0	< 0.004	< 0.004	< 0.004	< 0.01	1.61
7/25/77	1032.	0.0	0.048	0.008	0.040	0.02	1.88
8/ 8/77	1108.	0.0	< 0.004	< 0.004	< 0.004	< 0.01	3.36
8/22/77	1044.	0.0	0.262	0.059	0.203	0.29	2.69
8/22/77	1044.	0.0	0.245	0.059	0.186	0.29	2.89
8/22/77	1044.	0.0	0.242	0.059	0.183	0.29	2.78

ANALYTICAL DATA AT S-4 (CONTINUED)

DATE MO/DA/YR	TIME HRS.MIN	DEPTH METERS		O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/ 5/76	1141.	0.0		0.002	0.039		115.0	3.35
4/19/76	1143.	0.0	<	0.002	0.026		112.1	3.17
5/ 3/76	951.	0.0	<	0.002	0.019	62.6	108.6	2.86
5/17/76	950.	0.0		0.024	0.049		118.2	3.71
6/ 1/76	1300.	0.0		0.073	0.092		139.3	4.96
6/14/76	1010.	0.0		0.110	0.137		115.7	3.91
6/24/76	940.	0.0		0.038	0.073		97.2	3.20
7/12/76	1003.	0.0		0.041	0.070		98.8	3.89
7/26/76	940.	0.0		0.134	0.143		109.6	4.29
8/ 9/76	1042.	0.0		0.073	0.105		104.4	3.91
8/23/76	955.	0.0		0.366	0.414	45.2	103.6	5.26
9/ 7/76	1000.	0.0		0.288	0.315	65.2	95.7	4.74
9/22/76	1104.	0.0		0.306	0.383	50.6	110.1	5.82
10/ 4/76	1100.	0.0		0.111	0.130	78.5	112.9	5.05
10/ 4/76	1100.	0.0						
10/ 4/76	1100.	0.0						
10/18/76	1016.	0.0		0.083	0.107	47.2	66.6	3.47
11/ 1/76	953.	0.0		0.045	0.060	60.8	95.8	3.99
11/15/76	1036.	0.0		0.034	0.058	64.5	117.4	5.01
11/29/76	1024.	0.0	<	0.002	0.038	53.3	113.1	4.22
12/27/76	1108.	0.0	<	0.002	0.069	61.6	104.8	3.60
1/10/77	1002.	0.0		0.325	0.057	67.1	144.2	3.97
1/24/77	1010.	0.0		0.561	0.700	69.1	111.4	3.95
2/ 7/77	848.	0.0		0.257	0.301	79.1	114.0	4.85
2/23/77	1155.	0.0		0.073		65.0	110.6	3.88
3/ 7/77	917.	0.0		0.089	0.120	85.8	141.4	4.47
3/21/77	838.	0.0		0.417	0.476	54.8	113.7	4.07
4/ 4/77	834.	0.0		0.047	0.044	58.1	97.0	2.87
4/19/77	829.	0.0		0.008	0.039	46.7	106.4	3.08
5/ 2/77	1100.	0.0	<	0.002	0.031	52.4	103.8	2.89
5/16/77	1039.	0.0		0.647	0.721	49.2	102.6	3.90
5/31/77	1030.	0.0						
6/13/77	1115.	0.0		0.052	0.096	119.4	176.9	5.38
6/27/77	950.	0.0		0.006	0.052	58.0	106.7	2.75
7/11/77	1041.	0.0	<	0.002	0.044	67.2	107.7	2.70
7/25/77	1032.	0.0		0.002	0.046	73.7	113.3	2.78
8/ 8/77	1108.	0.0		0.006	0.050	72.0	153.9	3.34
8/22/77	1044.	0.0		0.080	0.112	80.7	136.6	4.37
8/22/77	1044.	0.0		0.075	0.115	85.2	137.1	4.21
8/22/77	1044.	0.0		0.075	0.111	85.5	137.7	4.21

ANALYTICAL DATA AT S-4 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/ 5/76	1041.	0.0	84.48	5.67		24.50
4/19/76	1042.	0.0	85.80		52.31	23.49
5/ 3/76	951.	0.0	71.00	5.26	46.58	21.79
5/17/76	950.	0.0	76.72	7.12	73.11	20.33
6/ 1/76	1000.	0.0	84.98	9.30	104.87	23.03
6/14/76	1010.	0.0	75.24		95.10	23.82
6/28/76	940.	0.0	61.00		63.60	22.62
7/12/76	1003.	0.0	55.65		75.31	17.47
7/26/76	940.	0.0	70.21		72.28	23.01
8/ 9/76	1042.	0.0	68.82	7.55	65.45	22.59
8/23/76	955.	0.0	62.95	9.57	90.37	17.12
9/ 7/76	1000.	0.0	62.52	9.18	85.41	18.54
9/20/76	1104.	0.0	61.79	14.22	96.98	18.80
10/ 4/76	1100.	0.0	69.66	7.29	95.28	20.88
10/ 4/76	1100.	0.0				
10/ 4/76	1100.	0.0				
10/18/76	1016.	0.0	44.87	4.04	65.85	14.04
11/ 1/76	953.	0.0	60.13	5.27	60.11	18.34
11/15/76	1036.	0.0	73.32	6.72	78.38	20.55
11/29/76	1024.	0.0	71.34	6.46	56.12	20.93
12/27/76	1108.	0.0	65.47	5.90	52.56	19.74
1/10/77	1002.	0.0	84.11	8.43	85.55	23.10
1/24/77	1010.	0.0	68.95	13.63	83.89	19.44
2/ 7/77	848.	0.0	67.54	27.29	92.60	19.97
2/23/77	1150.	0.0	68.81	9.83	71.24	21.07
3/ 7/77	917.	0.0	85.53	10.64	95.54	22.85
3/21/77	838.	0.0	63.05	9.38	88.81	19.72
4/ 4/77	834.	0.0	64.56	6.20	54.36	20.73
4/18/77	829.	0.0	63.95	4.40	52.64	22.17
5/ 2/77	1100.	0.0	68.36	6.77	53.91	21.81
5/16/77	1039.	0.0	55.31	11.72	83.75	17.22
5/31/77	1030.	0.0				
6/13/77	1115.	0.0	139.75	9.48	130.38	29.81
6/27/77	955.	0.0	71.19	5.98	50.77	21.26
7/11/77	1041.	0.0	73.46	4.88	36.40	21.72
7/25/77	1032.	0.0	75.41	6.47	52.54	20.16
8/ 9/77	1100.	0.0	81.13	7.17	37.69	23.16
8/22/77	1144.	0.0	85.75	5.92	89.37	23.07
8/22/77	1145.	0.0	88.97	6.96	89.37	23.11
8/22/77	1146.	0.0	84.16	5.92	88.59	23.46

ANALYTICAL DATA AT S-4 (CONTINUED)

DATE (MM/DD/YY)	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SO MG/L		TOTAL FE MG/L
4/ 5/76	1041.	0.0				
4/21/76	1042.	0.0				
5/ 3/76	951.	0.0		35.7		
5/17/76	952.	0.0				
6/ 1/76	1000.	0.0				
6/14/76	1013.	0.0				
6/28/76	940.	0.0				
7/12/76	1003.	0.0				
7/26/76	940.	0.0				
8/ 9/76	1042.	0.0				
8/23/76	955.	1.0	1.6	5.0		
9/ 7/76	1000.	0.0	1.6	7.0		0.13
9/20/76	1104.	0.0	2.9	13.0		
10/ 4/76	1100.	0.0	1.4			
10/ 4/76	1100.	0.0				
10/ 4/76	1100.	0.0				
10/18/76	1016.	0.0	3.5			0.17
11/ 1/76	953.	0.0	4.6			0.16
11/15/76	1036.	0.0	1.4	4.0		0.10
11/29/76	1024.	0.0	2.4	8.0		
12/27/76	1108.	0.0	2.0		<	0.02
1/10/77	1002.	0.0	1.8			
1/24/77	1010.	0.0	1.8	3.0		0.12
2/ 7/77	848.	0.0	1.5	1.0		0.09
2/23/77	1150.	0.0				
3/ 7/77	917.	0.0	1.0			0.04
3/21/77	838.	0.0	1.3			0.08
4/ 4/77	834.	0.0	2.5	3.0	<	0.02
4/19/77	829.	0.0	2.1	7.0	<	0.02
5/ 2/77	1100.	0.0	2.6	7.0		0.02
5/16/77	1039.	0.0	1.2	4.0		0.13
5/31/77	1030.	0.0				
6/13/77	1115.	0.0	0.8	12.0		0.23
6/27/77	950.	0.0	1.2		<	0.02
7/11/77	1041.	0.0		7.0		0.02
7/25/77	1032.	0.0	1.7			0.04
8/ 8/77	1108.	0.0	1.0			0.15
8/22/77	1044.	0.0	1.5	8.0		0.46
8/22/77	1044.	0.0	1.7	13.0		0.42
8/22/77	1044.	0.0	1.0	1.0		0.69

APPENDIX E

WATER CHEMISTRY DATA FOR BACKPUMPING STATIONS

APPENDIX E. WATER CHEMISTRY DATA FOR BACKPUMPING STATIONS (BPS)

FIELD DATA AT BPS-1

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
4/27/76	1145.	0.0	26.0	8.0	775.	8.65	0.82
4/27/76	1145.	2.0	25.5	7.9	775.	8.60	0.82
5/13/76	1015.	0.0	26.7	6.1	705.	6.35	0.90
5/13/76	1015.	3.0	26.2	5.6	640.	6.50	0.90
5/26/76	925.	0.0	26.0	8.4	1115.	7.90	0.86
5/26/76	925.	3.0	25.7	6.5	1145.	7.30	0.86
6/15/76	1300.	0.0	27.5	5.4	1150.	7.35	0.91
6/15/76	1300.	3.0	27.5	5.1	1150.	7.25	0.91
7/13/76	1442.	0.0	30.0	8.8	755.	8.50	1.11
7/13/76	1442.	3.0	29.0	6.6	615.	8.20	1.11
8/17/76	1100.	0.0	30.6	6.5	1130.	7.60	0.71
8/17/76	1100.	2.0	29.5	2.8	1145.	7.60	0.71
9/14/76	1015.	0.0	29.3	4.7	885.	7.40	0.82
9/14/76	1015.	3.5	28.5	1.4	1250.	7.15	0.62
9/28/76	950.	0.0	28.5	6.0	590.	7.42	1.07
9/28/76	950.	3.5	27.5	1.0	1520.	6.95	1.07
10/13/76	920.	0.0	23.8	6.1	1050.	7.70	0.86
10/13/76	920.	4.0	23.6	6.0	990.	7.70	0.86
1/ 4/77	1044.	0.0	17.5	9.2	870.	7.60	0.50
1/ 4/77	1044.	3.5	17.8	5.2	2005.	7.18	0.50
3/ 9/77	1405.	0.0	21.0	7.1	752.	7.85	0.64
3/ 9/77	1405.	1.5	21.0	7.1	755.	7.85	0.64
6/16/77	1220.	0.0	29.7	6.8	700.	7.90	1.00
6/16/77	1220.	3.0	28.3	5.4	740.	7.80	1.00
7/13/77	1410.	0.0	30.2	5.9	750.	7.70	1.13
7/13/77	1410.	2.5	29.7	4.3	830.	7.60	1.13
8/16/77	1407.	0.0	29.8	6.3	1100.	7.40	0.72
8/16/77	1407.	2.0	28.4	3.7	1140.	7.20	0.72

FIELD DATA AT BPS-2

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
4/27/76	1252.	0.0	27.5	8.1	830.	8.30	0.53
4/27/76	1252.	6.0	26.0	6.9	900.	8.30	0.53
5/11/76	1230.	0.0	27.0	5.5	720.	7.80	0.95
5/11/76	1230.	6.0	25.7	3.9	720.	7.60	0.95
5/24/76	900.	0.0	25.0	2.5	1130.	7.25	0.36
5/24/76	900.	2.5	25.0	2.4	1135.	7.20	0.36
6/15/76	923.	0.0	28.2	6.8	1120.	7.70	1.00
6/15/76	923.	4.0	28.0	5.7	1120.	7.60	1.00
7/13/76	953.	0.0	28.8	3.2	1125.	7.25	1.20
7/13/76	953.	5.0	28.5	2.4	1125.	7.25	1.20
8/17/76	902.	0.0	28.0	1.6	1155.	7.40	0.63
8/17/76	902.	4.0	28.0	1.4	1155.	7.40	0.63
9/14/76	940.	0.0	27.0	1.6	1150.	7.00	0.75
9/14/76	940.	5.0	26.8	1.4	1300.	6.90	0.75
9/28/76	915.	0.0	27.9	2.5	775.	7.00	1.06
9/28/76	915.	4.0	27.9	1.6	1150.	6.95	1.06
10/13/76	1512.	0.0	24.5	7.8	990.	7.80	0.60
10/13/76	1512.	3.0	23.5	6.1	990.	7.75	0.60
1/ 4/77	1007.	0.0	18.1	6.7	1150.	7.60	0.37
1/ 4/77	1007.	4.0	18.3	5.2	1400.	7.47	0.37
3/ 8/77	1000.	0.0	21.7	8.1	730.	8.00	0.25
3/ 8/77	1000.	3.0	21.7	7.7	730.	8.00	0.25
6/16/77	1045.	0.0	29.6	6.3	750.	7.90	0.80
6/16/77	1045.	2.5	29.4	4.9	760.	7.90	0.80
7/13/77	1315.	0.0	31.3	6.4	630.	8.10	1.07
7/13/77	1315.	2.5	31.0	5.3	600.	8.00	1.07
8/16/77	1310.	0.0	28.8	6.2	845.	7.40	0.82
8/16/77	1310.	4.0	27.9	3.9	900.	7.20	0.82

FIELD DATA AT BPS-3

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
4/27/76	1400.	0.0	26.7	9.1	880.	8.50	0.80
4/27/76	1400.	3.0	25.0	7.4	880.	8.50	0.80
5/11/76	1305.	0.0	28.5	7.7	720.	8.30	1.23
5/11/76	1305.	3.5	26.7	5.9	725.	8.20	1.23
5/24/76	925.	0.0	25.0	2.9	1140.	7.30	0.54
5/24/76	925.	2.0	25.0	2.5	1140.	7.30	0.54
6/15/76	955.	0.0	29.0	7.1	1115.	7.75	1.10
6/15/76	955.	3.0	28.7	5.8	1125.	7.65	1.10
7/13/76	1037.	0.0	29.4	4.0	1140.	7.45	0.83
7/13/76	1037.	4.0	28.2	3.0	1155.	7.47	0.83
8/17/76	936.	0.0	28.2	1.3	1155.	7.40	0.73
8/17/76	936.	3.0	28.2	1.2	1155.	7.40	0.73
9/14/76	215.	0.0	28.0	3.2	1150.	7.10	1.04
9/14/76	215.	5.0	27.3	1.3	1360.	7.00	1.04
9/28/76	1325.	0.0	31.6	7.8	530.	7.58	1.24
9/28/76	1325.	3.5	28.3	2.2	655.	7.20	1.24
10/13/76	1442.	0.0	23.5	8.3	535.	7.92	0.41
10/13/76	1442.	3.0	23.3	7.9	1010.	7.95	0.41
1/ 4/77	1513.	0.0	18.2	7.3	842.	7.68	0.33
1/ 4/77	1513.	3.0	18.2	6.1	865.	7.56	0.33
3/ 8/77	1140.	0.0	21.2	6.8	730.	7.80	0.46
3/ 8/77	1140.	3.5	21.2	6.8	725.	7.90	0.46
6/16/77	1025.	0.0	29.8	8.0	840.	8.00	1.00
6/16/77	1025.	3.5	29.0	7.6	880.	6.70	1.00
7/13/77	1300.	0.0	31.2	6.4	530.	8.40	1.48
7/13/77	1300.	2.0	30.6	5.8	650.	8.40	1.48
8/16/77	1255.	0.0	28.8	5.5	920.	7.35	0.97
8/16/77	1255.	2.0	28.2	3.8	920.	7.15	0.97

FIELD DATA AT BPS-4

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
4/27/76	1505.	0.0	27.7	7.8	855.	8.40	1.20
4/27/76	1505.	4.0	26.0	5.8	890.	8.30	1.20
5/11/76	1340.	0.0	27.7	6.6	720.	8.40	1.95
5/11/76	1340.	3.5	26.5	5.5	720.	8.25	1.95
5/24/76	955.	0.0	25.3	3.0	1140.	7.40	0.74
5/24/76	955.	2.7	25.0	2.4	1140.	7.35	0.74
6/15/76	1030.	0.0	29.5	8.3	1120.	8.10	1.35
6/15/76	1030.	4.0	29.0	7.4	1120.	8.05	1.35
7/13/76	1137.	0.0	29.9	8.8	1155.	7.65	0.67
7/13/76	1137.	4.0	28.7	2.0	1155.	7.40	0.67
8/17/76	1010.	0.0	30.1	4.9	845.	7.90	1.14
8/17/76	1010.	4.0	29.8	4.0	850.	7.80	1.14
9/14/76	1200.	0.0	29.5	5.4	645.	7.35	1.38
9/14/76	1200.	4.5	28.5	2.1	840.	7.05	1.38
9/28/76	1130.	0.0	29.5	7.4	630.	7.68	1.17
9/28/76	1130.	4.5	28.2	3.2	795.	7.30	1.17
10/13/76	1402.	0.0	24.5	7.8	530.	7.75	0.82
10/13/76	1402.	4.5	23.4	5.1	720.	7.50	0.82
1/ 4/77	1443.	0.0	18.0	7.5	780.	7.70	0.45
1/ 4/77	1443.	4.5	18.0	6.6	779.	7.62	0.45
3/ 8/77	1205.	0.0	22.2	7.1	740.	7.90	0.61
3/ 8/77	1206.	4.0	21.7	4.5	745.	7.55	0.61
5/16/77	1000.	0.0	29.4	5.0	850.	7.70	1.45
5/16/77	1000.	3.2	28.8	3.8	880.	7.70	1.45
7/13/77	1240.	0.0	31.1	7.4	640.	8.70	1.52
7/13/77	1240.	4.0	30.6	6.6	640.	8.70	1.52
8/16/77	1236.	0.0	29.4	6.1	750.	7.45	1.04
8/16/77	1236.	4.0	28.6	4.7	780.	7.30	1.04

FIELD DATA AT BPS-5

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
4/27/76	1550.	0.0	25.0	11.5	600.	8.70	2.90
4/27/76	1550.	7.0	25.0	7.5	600.	8.60	2.90
5/11/76	1425.	0.0	27.2	7.4	710.	8.60	1.95
5/11/76	1425.	8.0	26.0	5.5	710.	8.35	1.95
5/24/76	1055.	0.0	25.3	3.0	1135.	7.40	0.72
5/24/76	1055.	4.5	25.2	2.2	1130.	7.40	0.72
6/15/76	1055.	0.0	28.8	7.6	1110.	8.10	1.60
6/15/76	1055.	4.0	28.6	6.8	1115.	8.05	1.60
7/14/76	1215.	0.0	29.8	5.2	1150.	7.50	0.88
7/14/76	1215.	6.0	28.5	2.3	1155.	7.35	0.88
8/17/76	1340.	0.0	31.3	5.9	840.	8.00	1.18
8/17/76	1340.	5.0	29.5	3.3	845.	7.70	1.18
9/16/76	1035.	0.0	28.2	4.1	1100.	6.90	1.53
9/16/76	1035.	5.5	27.8	2.2	1200.	6.80	1.53
9/30/76	1000.	0.0	28.6	4.0	790.	7.55	1.48
9/30/76	1000.	5.0	28.5	2.8	985.	7.25	1.48
10/14/76	1331.	0.0	24.4	8.0	460.	8.08	0.92
10/14/76	1331.	4.0	23.8	6.3	650.	7.88	0.92
1/ 4/77	1340.	0.0	17.7	7.0	728.	7.70	0.53
1/ 4/77	1340.	7.5	17.7	6.1	722.	7.70	0.53
3/ 8/77	1235.	0.0	21.2	9.2	715.	8.30	0.48
3/ 8/77	1235.	5.5	20.7	8.4	715.	8.30	0.48
6/16/77	900.	0.0	29.4	6.4	960.	7.60	1.24
6/16/77	900.	7.3	29.0	6.1	970.	7.60	1.24
7/13/77	1220.	0.0	31.6	7.2	500.	8.60	1.35
7/13/77	1220.	4.0	30.0	5.9	585.	8.70	1.35
8/16/77	1200.	0.0	29.7	7.1	710.	7.80	1.36
8/16/77	1200.	5.0	28.2	5.1	740.	7.65	1.36

FIELD DATA AT BPS-6

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
4/27/76	1742.	0.0	27.7	7.7	760.	8.55	1.02
4/27/76	1742.	3.5	26.5	7.0	750.	8.50	1.02
5/13/76	1215.	0.0	27.0	3.5	760.		1.38
5/13/76	1215.	3.5	25.5	1.5	770.		1.38
5/26/76	1215.	0.0	28.2	5.1	1135.	7.30	1.21
5/26/76	1215.	3.0	26.2	3.4	1135.	7.20	1.21
6/17/76	930.	0.0	28.6	6.1	780.	7.70	1.08
6/17/76	930.	3.0	28.2	6.6	900.	8.35	1.08
7/15/76	1025.	0.0	29.5	2.8	830.	7.40	0.95
7/15/76	1025.	3.8	29.4	2.5	1105.	7.42	0.95
8/18/76	1100.	0.0	29.2	1.9		7.30	0.86
8/18/76	1100.	3.0	29.2	1.5		7.15	0.86
9/15/76	215.	0.0	29.7	3.9	710.	7.10	0.85
9/15/76	215.	3.0	27.7	1.3	760.	6.82	0.85
9/29/76	100.	0.0	28.2	1.9	293.	6.55	0.74
9/29/76	100.	4.0	28.2	1.3	465.	6.65	0.74
10/15/76	1049.	0.0	23.8	9.4	620.	8.50	0.94
10/15/76	1049.	5.0	23.4	7.5	860.	8.35	0.94
1/ 6/77	837.	0.0	16.8	5.7	725.	7.30	0.56
1/ 6/77	837.	4.0	16.8	5.2	720.	7.20	0.56
3/ 8/77	1100.	0.0	21.6	7.2	720.	7.90	0.55
3/ 8/77	1100.	3.5	21.2	7.0	720.	7.80	0.55
6/16/77	900.	0.0	29.3	8.1	780.	8.10	0.78
6/16/77	900.	3.0	29.3	7.2	810.	8.10	0.78
7/13/77	910.	0.0	30.4	5.2	345.	7.50	1.00
7/13/77	910.	3.0	29.7	5.7	530.	8.20	1.00
8/16/77	1135.	0.0	29.6	5.2	710.	7.58	1.07
8/16/77	1135.	3.0	28.3	1.5	910.	7.10	1.07

FIELD DATA AT BPS-7

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
4/27/76	1822.	0.0	28.2	8.5	605.	6.70	0.92
4/27/76	1822.	2.5	26.7	7.0	765.	6.50	0.92
5/12/76	1630.	0.0	29.2	8.1	740.	7.30	1.39
5/12/76	1630.	3.0	26.5	5.7	740.	7.05	1.39
5/25/76	1337.	0.0	27.2	6.8	810.	7.50	1.37
5/25/76	1337.	2.5	26.3	5.2	820.	7.30	1.37
6/17/76	1005.	0.0	28.8	5.4	425.	7.45	0.94
6/17/76	1005.	6.0	28.5	4.2	355.	7.10	0.94
7/15/76	852.	0.0	28.8	2.8	630.	7.14	1.43
7/15/76	852.	3.0	28.7	2.5	880.	7.14	1.43
8/18/76	1217.	0.0	29.5	2.6		7.15	0.84
8/18/76	1217.	6.0	29.3	1.7		7.00	0.84
9/15/76	930.	0.0	27.5	1.2	130.	6.30	0.52
9/15/76	930.	6.0	27.5	0.6	200.	6.30	0.52
9/29/76	905.	0.0	27.7	1.2	75.	5.75	0.60
9/29/76	905.	3.0	27.7	0.6	175.	5.85	0.60
10/14/76	900.	0.0	23.8	5.5	440.	7.45	1.30
10/14/76	900.	3.0	24.0	5.3	560.	7.45	1.30
1/ 5/77	1455.	0.0	18.2	5.7	845.	7.50	0.86
1/ 5/77	1455.	3.5	17.2	4.8	835.	7.45	0.86
3/ 9/77	905.	0.0	21.0	5.2	730.	7.45	0.98
3/ 9/77	905.	4.5	21.0	4.5	735.	7.40	0.98
6/16/77	830.	0.0	29.4	5.6	720.	7.10	1.28
6/16/77	830.	2.8	28.7	2.8	700.	7.00	1.28
7/13/77	1127.	0.0	31.2	5.0	450.	7.55	1.04
7/13/77	1127.	4.0	30.7	4.1	400.	7.45	1.04
8/16/77	1010.	0.0	29.4	7.8	590.	8.30	0.94
8/16/77	1010.	2.5	29.4	5.6	660.	8.30	0.94

FIELD DATA AT BPS-8

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
4/28/76	1115.	0.0	26.3	3.8	780.	8.30	0.70
4/28/76	1115.	2.0	26.3	3.7	780.	8.30	0.70
5/12/76	1545.	0.0	28.6	8.7	765.	7.40	1.18
5/12/76	1545.	2.0	26.5	6.4	770.	7.20	1.00
5/25/76	1420.	0.0	27.2	6.8	845.	7.50	1.32
5/25/76	1420.	2.5	26.0	5.3	850.	7.40	1.32
6/16/76	1300.	0.0	28.7	5.5	350.	8.00	1.07
6/16/76	1300.	3.0	28.2	4.5	350.	8.05	1.07
7/14/76	1513.	0.0	31.4	5.8	380.	7.30	0.74
7/14/76	1513.	2.5	28.9	3.0	370.	7.05	0.74
8/18/76	1450.	0.0	28.9	3.3		6.90	0.83
8/18/76	1450.	2.5	28.9	2.8		6.79	0.83
9/15/76	1115.	0.0	27.5	1.6	88.	6.00	0.47
9/15/76	1115.	3.0	27.5	0.9	115.	6.00	0.47
9/29/76	1050.	0.0	28.3	2.3	65.	5.62	0.61
9/29/76	1050.	3.0	28.0	1.8	130.	5.78	0.61
10/14/76	1019.	0.0	23.8	3.8	615.	7.40	1.06
10/14/76	1019.	3.0	23.7	3.4	695.	7.28	1.06
1/ 5/77	1356.	0.0	17.7	5.6	708.	7.47	1.27
1/ 5/77	1356.	2.0	14.8	4.9	708.	7.49	1.27
3/ 9/77	1025.	0.0	21.2	5.6	775.	7.38	1.65
3/ 9/77	1025.	2.5	21.0	4.9	770.	7.25	1.65

FIELD DATA AT BPS-9

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
4/28/76	1343.	0.0	26.2	6.5	790.	8.70	0.60
4/28/76	1343.	3.0	25.7	6.4	790.	8.80	0.60
5/12/76	1515.	0.0	28.7	5.1	740.	6.90	0.90
5/12/76	1515.	2.5	26.0	2.2	745.	6.40	0.90
5/25/76	1507.	0.0	27.4	7.5	795.	7.80	1.05
5/25/76	1507.	3.5	27.0	6.5	800.	7.70	1.05
6/16/76	1235.	0.0	28.5	6.5	350.	7.10	0.96
6/16/76	1235.	3.5	27.5	4.0	335.	6.87	0.96
7/14/76	1436.	0.0	31.8	5.5	389.	7.65	0.68
7/14/76	1436.	4.5	28.5	3.5	510.	6.88	0.68
8/18/76	1400.	0.0	27.6	3.0		6.65	0.76
8/18/76	1400.	3.0	27.6	2.8		6.50	0.76
9/15/76	1145.	0.0	28.2	3.0	165.	6.10	0.51
9/15/76	1145.	4.0	26.8	1.3	160.	5.90	0.51
9/29/76	1140.	0.0	28.2	2.5	115.	5.95	0.62
9/29/76	1140.	3.5	27.3	0.6	135.	5.70	0.62
10/14/76	1135.	0.0	25.0	4.0	310.	7.00	0.63
10/14/76	1135.	4.0	24.5	3.5	520.	7.18	0.63
1/ 5/77	1217.	0.0	17.0	6.5	682.	7.58	1.42
1/ 5/77	1217.	4.0	16.7	6.1	688.	7.50	1.42
3/ 9/77	1100.	0.0	20.6	6.7	715.	7.58	1.29
3/ 9/77	1100.	4.5	20.5	6.4	715.	7.50	1.29

FIELD DATA AT BPS-10

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
4/28/76	1512.	0.0	27.0	9.6	790.	9.00	0.28
5/12/76	1500.	0.0	26.4	4.8	745.	6.80	0.88
5/25/76	1452.	0.0	26.8	6.5	790.	7.70	0.93
6/16/76	1355.	0.0	27.7	6.9	345.	7.05	0.96
7/14/76	1414.	0.0	30.3	4.9	380.	6.90	0.95
8/16/76	1350.	0.0	27.4	3.6		6.50	0.85
9/15/76	1200.	0.0	27.7	2.3	130.	5.60	0.54
9/29/76	1130.	0.0	28.3	2.7	148.	5.75	0.72
10/14/76	1202.	0.0	24.9	3.7	415.	7.15	0.60
1/ 5/77	1152.	0.0	17.0	6.7	688.	7.50	1.50
3/ 9/77	1120.	0.0	20.2	7.4	705.	7.50	0.94

FIELD DATA AT BPS-11

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
4/28/76	1222.	0.0	26.5	4.3	765.	7.20	0.60
5/12/76	1600.	0.0	29.0	8.2	760.	7.40	1.16
5/25/76	1415.	0.0	27.2	8.0	815.	7.70	1.11
6/16/76	1250.	0.0	30.0	6.5	420.	7.60	1.07
7/14/76	1542.	0.0	30.4	4.4	520.	7.00	0.96
8/16/76	1255.	0.0	29.0	1.2		6.65	1.25
9/15/76	1010.	0.0	26.8	0.6	160.	5.95	0.40
9/29/76	1115.	0.0	27.5	1.0	170.	5.85	0.56
10/14/76	1057.	0.0	23.4	1.6	390.	6.66	0.70
1/ 5/77	1228.	0.0	17.3	5.6	700.	7.30	1.50
3/ 9/77	1015.	0.0	20.3	5.7	610.	7.42	1.44

FIELD DATA AT BPS-13

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
4/28/76	1010.	0.0	25.0	8.4	815.	8.70	0.76
5/12/76	1220.	0.0	27.5	9.4	705.	7.50	1.13
5/25/76	1320.	0.0	26.7	7.6	790.	7.70	1.30
6/17/76	1035.	0.0	28.0	7.5	735.	8.55	2.03
7/15/76	923.	0.0	28.9	7.3	842.	8.60	1.82
8/18/76	1200.	0.0	29.8	7.1		8.60	2.25
9/15/76	915.	0.0	27.5	7.2	595.	8.30	1.42
9/29/76	920.	0.0	29.2	5.6	668.	7.75	1.55
10/14/76	937.	0.0	23.8	4.2	580.	7.25	1.35
1/ 6/77	922.	0.0	16.4	8.8	628.	7.42	0.86
3/ 9/77	920.	0.0	18.2	8.9	685.	8.10	0.36

E-12

FIELD DATA AT BPS-14

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
4/27/76	1707.	0.0	27.7	8.5	760.	8.65	0.81
4/27/76	1707.	1.5	27.5	8.3	765.	8.65	0.81
5/12/76	812.	0.0	25.2	8.7	715.	7.25	1.03
5/25/76	1100.	0.0	26.0	9.2	700.	6.70	1.57
6/17/76	915.	0.0	27.3	9.2	955.	8.65	2.20
7/15/76	1022.	0.0	29.0	8.1	718.	8.75	2.70
8/18/76	1045.	0.0	29.4	7.5		8.90	2.30
9/15/76	230.	0.0	29.5	7.8	770.	8.20	1.50
9/29/76	120.	0.0	29.7	8.7	622.	7.95	1.82
10/15/76	848.	0.0	23.2	8.4	785.	8.20	1.00
1/ 6/77	951.	0.0	16.5	10.2	645.	8.00	0.38
3/10/77	645.	0.0	20.0	9.4	665.	8.20	0.24

FIELD DATA AT BPS-15

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
5/12/76	850.	0.0	25.0	8.7	725.	7.00	0.75
5/12/76	850.	3.0	25.0	8.2	740.	7.00	0.75
5/25/76	830.	0.0	24.8	9.0	700.	8.10	0.16
5/25/76	830.	3.0	24.5	8.5	700.	8.00	0.16
6/16/76	855.	0.0	27.5	8.3	705.	8.20	0.38
6/16/76	855.	3.0	27.0	7.9	680.	8.10	0.38
7/14/76	925.	0.0	28.0	7.3	715.	8.55	0.78
7/14/76	925.	3.0	28.0	6.6	715.	8.45	0.78
8/18/76	920.	0.0	29.1	5.5		8.15	0.85
8/18/76	920.	3.5	29.1	5.3		8.15	0.85
9/16/76	845.	0.0	27.7	7.2	645.	7.80	0.74
9/16/76	845.	3.5	25.7	6.7	660.	7.80	0.74
9/30/76	900.	0.0	28.3	7.6	505.	7.65	1.02
9/30/76	900.	3.5	28.2	7.4	568.	7.65	1.02
10/15/76	938.	0.0	23.3	8.8	590.	8.55	0.43
10/15/76	938.	3.5	23.5	8.3	635.	8.65	0.43
1/ 5/77	916.	0.0	15.7	11.4	650.	8.25	0.21
1/ 5/77	916.	3.0	15.7	10.6	645.	8.15	0.21
3/10/77	922.	0.0	20.0	9.2	655.	8.10	0.18
3/10/77	922.	3.5	20.0	8.5	655.	8.10	0.18

FIELD DATA AT BPS-16

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
5/12/76	924.	0.0	25.2	8.3	730.	7.05	0.58
5/25/76	9[illegible].	0.0	21.0	8.0	69[illegible].	8.10	0.27
6/16/76	925.	0.0	27.[illegible]	8.4	725.	8.15	0.61
7/14/76	1003.	0.0	28.2	7.7	660.	8.29	[illegible].27
8/18/76	950.	0.0	28.[illegible]	6.6		8.35	1.32
9/16/76	915.	0.0	27.5	7.4	675.	7.80	1.32
9/30/76	935.	0.0	28.3	8.2	505.	8.0[illegible]	1.[illegible]4
10/15/76	1013.	0.0	22.[illegible]	9.1	615.	8.6[illegible]	0.60
1/ 5/77	[illegible].	0.0	16.4	10.2	560.	7.40	0.21
3/10/77	1450.	0.0	20.0	8.9	6[illegible].	8.10	0.24

FIELD DATA AT BPS-17

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
5/12/76	1113.	0.0	25.7	9.0	685.	7.65	1.00
5/25/76	1015.	0.0	25.0	8.5	700.	8.90	1.30
6/16/76	1045.	0.0	27.8	9.1	875.	9.05	1.46
7/14/76	1137.	0.0	28.5	8.6	825.	6.60	1.60
8/17/76	1310.	0.0	29.8	9.6	715.	9.00	1.40
9/14/76	1135.	0.0	28.2	6.7	645.	7.95	2.00
9/28/76	1300.	0.0	25.9	6.9	580.	7.85	1.74
10/12/76	1145.	0.0	22.8	8.7	815.	7.75	0.38
1/ 4/77	1309.	0.0	17.0	11.0	640.	8.42	0.48
3/10/77	1025.	0.0	20.0	9.2	680.	8.30	0.22
6/16/77	930.	0.0	28.5	8.7	660.	8.40	1.45
7/13/77	1450.	0.0	30.4	10.0	645.	8.60	1.28
8/16/77	1220.	0.0	28.6	8.6	640.	8.95	1.33

FIELD DATA AT BPS-18

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
5/12/76	1136.	0.0	25.7	9.1	700.	7.95	0.90
5/25/76	1045.	0.0	24.5	4.6	1130.	7.40	1.00
6/16/76	1100.	0.0	27.7	7.6	1115.	8.20	1.15
7/14/76	1152.	0.0	28.2	6.8	772.	8.05	1.35
8/17/76	1322.	0.0	30.9	6.9	800.	8.60	1.34
9/14/76	1145.	0.0	28.2	4.2	625.	7.50	1.60
9/28/76	1115.	0.0	28.6	6.7	992.	7.80	1.65
10/12/76	1215.	0.0	22.8	8.8	815.	7.90	0.55
1/ 4/77	1322.	0.0	17.0	10.4	630.	8.32	0.42
3/ 8/77	1225.	0.0	20.7	9.7	700.	8.40	0.24

FIELD DATA AT BPS-19

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
5/12/76	1010.	0.0	25.0	8.7	670.	7.60	1.23
5/25/76	925.	0.0	24.9	7.3	820.	8.40	1.71
6/15/76	1000.	0.0	27.7	9.2	885.	8.60	1.60
7/14/76	1030.	0.0	28.2	7.9	898.	8.48	1.39
8/17/76	1254.	0.0	30.4	8.3	780.	8.85	1.35
9/14/76	1125.	0.0	28.3	6.4	690.	8.00	1.74
9/28/76	1050.	0.0	28.5	7.2	638.	7.95	1.30
10/13/76	1130.	0.0	22.8	8.1	685.	7.75	0.38
1/ 4/77	1256.	0.0	17.2	10.6	615.	8.40	0.56
3/10/77	1020.	0.0	20.5	9.4	740.	8.35	0.22

FIELD DATA AT BPS-20

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
5/11/76	1405.	0.0	28.5	7.7	800.	8.25	1.10
5/24/76	1040.	0.0	25.7	2.4	1140.	7.45	0.65
6/15/76	1020.	0.0	28.3	3.0	1130.	7.60	1.30
7/13/76	1112.	0.0	29.3	4.8	965.	7.55	0.93
8/17/76	1000.	0.0	28.9	2.7	840.	7.50	1.31
9/14/76	1210.	0.0	28.7	3.0	735.	7.20	1.63
9/28/76	1300.	0.0	29.7	3.6	689.	7.25	1.30
10/13/76	1335.	0.0	23.5	5.8	765.	7.50	1.38
1/ 4/77	1423.	0.0	16.8	6.1	660.	7.60	0.62
3/ 8/77	1110.	0.0	21.5	4.2	740.	7.65	0.43

FIELD DATA AT BPS-22

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
5/12/76	1020.	0.0	25.2	8.2	675.	7.50	1.07
5/[illegible]/76	[illegible]40.	0.0	24.5	[illegible].0	730.	8.60	1.03
6/1[illegible]/76	1010.	0.0	27.2	8.5	775.	8.25	1.70
7/14/76	1109.	0.0	28.2	8.8	678.	8.55	1.43
8/17/76	1255.	0.0	30.1	7.8	680.	8.70	0.68
9/14/76	1110.	0.0	28.4	7.0	450.	8.10	1.70
9/28/76	1035.	0.0	25.7	7.1	760.	7.86	1.78
10/13/76	1110.	0.0	22.8	8.6	670.	7.95	0.38
1/ 4/77	1240.	0.0	16.6	10.4	598.	8.30	0.42
3/10/77	1010.	0.0	20.0	9.4	680.	8.20	0.17

FIELD DATA AT BPS-23

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
4/27/76	1440.	0.0	27.0	9.3	900.	8.60	0.67
5/11/76	1320.	0.0	27.3	6.8	725.	8.35	0.73
5/24/76	955.	0.0	25.0	2.7	1140.	7.25	0.53
6/15/76	945.	0.0	28.0	7.0	1120.	7.70	1.02
7/13/76	1030.	0.0	28.8	4.8	1150.	7.55	1.05
8/17/76	930.	0.0	29.7	3.2	1130.	7.50	0.94
9/16/76	1005.	0.0	27.0	2.5	1400.	6.92	1.36
9/28/76	1340.	0.0	30.0	5.0	815.	7.45	1.00
10/13/76	1430.	0.0	22.8	8.8	825.	7.95	0.86
1/ 4/77	340.	0.0	17.5	8.6	670.	8.00	0.48
3/ 8/77	1030.	0.0	21.0	9.2	725.	8.20	0.28

FIELD DATA AT BPS-24

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
5/11/76	1030.	0.0	26.5	5.3	730.	7.80	0.71
5/24/76	850.	0.0	24.8	2.4	1130.	7.25	0.32
6/15/76	915.	0.0	27.7	6.6	1130.	7.70	0.91
7/13/76	940.	0.0	28.7	5.3	1135.	7.60	1.06
8/17/76	855.	0.0	28.0	1.6	1155.	7.40	0.67
9/14/76	935.	0.0	27.0	1.7	825.	7.00	0.93
9/28/76	910.	0.0	27.9	2.1	955.	7.05	1.25
10/13/76	1536.	0.0	24.5	9.9	1200.	8.80	0.82
1/ 4/77	952.	0.0	17.6	9.1	665.	7.90	0.29
3/ 8/77	940.	0.0	21.3	9.1	750.	8.15	0.27

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FIELD DATA AT BPS-25

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
5/11/76	1055.	0.0	26.7	6.3	730.	8.40	0.68
5/24/76	825.	0.0	23.8	4.4	1130.	7.70	0.68
6/15/76	905.	0.0	26.2	8.4	1145.	7.60	0.87
7/13/76	911.	0.0	28.7	6.2	1140.	8.15	0.92
8/17/76	845.	0.0	28.1	6.9	1120.	8.20	0.87
9/14/76	900.	0.0	27.9	6.6	900.	7.80	1.14
9/28/76	815.	0.0	28.0	8.2	810.	7.65	1.13
10/13/76	1552.	0.0	24.4	9.4	1120.	8.55	0.76
1/ 4/77	925.	0.0	17.2	9.4	610.	8.25	0.26
3/ 8/77	900.	0.0	21.5	9.1	720.	8.40	0.31
6/1[illegible]/77	1100.	0.0	29.3	7.6	840.	8.00	0.95
7/13/77	1300.	0.0	31.9	6.2	690.	6.10	0.72
8/16/77	1330.	0.0	29.8	6.8	1060.	7.64	0.93

FIELD DATA AT BPS-26

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
5/12/76	1038.	0.0	25.5	8.7	680.	7.60	1.10
5/25/76	950.	0.0	24.2	7.2	650.	9.10	0.76
6/16/76	1035.	0.0	27.7	7.5	755.	8.20	1.22
7/14/76	1045.	0.0	28.2	7.2	947.	8.29	1.35
8/17/76	1222.	0.0	30.0	9.7	705.	6.65	1.12
9/14/76	1055.	0.0	28.5	5.6	850.	7.90	1.53
9/28/76	1030.	0.0	28.7	7.5	805.	7.95	1.17
10/12/76	1047.	0.0	22.8	8.3	575.	6.00	0.17
1/ 4/77	1152.	0.0	17.0	9.9	585.	8.28	0.36
3/ 8/77	930.	0.0	21.3	9.1	725.	8.30	0.27
6/16/77	1145.	0.0	29.6	7.6	640.	8.30	1.67
7/13/77	1435.	0.0	29.6	8.6	675.	6.70	0.76
8/16/77	1345.	0.0	29.6	10.4	790.	8.23	1.30

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
4/27/76	1030.	0.0	25.5	7.8	730.	8.65	0.80
5/13/76	920.	0.0	27.0	8.3	710.	7.05	1.32
5/26/76	905.	0.0	25.4	9.0	660.	6.90	1.52
6/15/76	1240.	0.0	28.5	7.6	1080.	8.10	0.86
7/13/76	1255.	0.0	30.0	7.8	689.	8.45	1.50
8/17/76	1143.	0.0	29.9	7.3	740.	8.30	1.03
9/14/76	1040.	0.0	28.7	7.8	685.	8.10	1.32
9/28/76	1015.	0.0	28.4	6.0	600.	7.70	1.61
10/13/76	1020.	0.0	23.0	8.6	635.	7.90	0.24
1/ 4/77	1130.	0.0	17.0	9.8	600.	8.70	0.40
3/ 8/77	1425.	0.0	20.0	8.8	680.	8.10	0.27

FIELD DATA AT BPS-27

FIELD DATA AT BPS-28

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
4/27/76	1123.	0.0	25.5	7.9	735.	8.40	0.38
5/13/76	950.	0.0	26.5	7.4	720.	6.55	1.21
5/26/76	915.	0.0	25.4	8.7	660.	8.40	0.71
6/15/76	1245.	0.0	28.5	7.6	1090.	7.90	0.92
7/13/76	1430.	0.0	29.9	8.1	680.	6.49	1.68
8/17/76	1115.	0.0	29.8	5.5	870.	7.95	1.07
9/14/76	1030.	0.0	27.8	6.4	600.	7.95	1.20
9/28/76	1005.	0.0	28.2	6.8	600.	7.75	1.03
10/13/76	953.	0.0	23.0	8.4	870.	7.95	0.52
1/ 4/77	1110.	0.0	17.0	9.8	620.	8.00	0.36
3/ 8/77	1420.	0.0	21.0	8.4	755.	7.90	0.41
6/16/77	1220.	0.0	29.0	7.6	680.	8.10	1.10
7/13/77	1420.	0.0	29.2	9.7	665.	8.70	0.71
8/16/77	1355.	0.0	26.6	7.2	645.	7.95	0.95

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TEMP CENT	D.O. MG/L	SP COND UMHOS/CM	PH	SECCHI M
6/16/77	1240.	0.0	29.6	8.3	790.	8.10	1.40
6/16/77	1240.	2.8	28.2	4.0	1100.	7.60	1.40
7/13/77	1355.	0.0	31.2	6.4	590.	7.80	0.97
7/13/77	1355.	3.0	30.2	3.8	785.	7.70	0.97
8/16/77	1423.	0.0	29.6	4.8	1000.	7.35	1.00
8/16/77	1423.	3.0	28.5	1.4	1230.	7.10	1.00

FIELD DATA AT BPS-29

APPENDIX E. WATER CHEMISTRY DATA FOR BACKPUMPING STATIONS (BPS)

ANALYTICAL DATA AT BPS-1

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS		NOX MG/L		NO2 MG/L		NO3 MG/L		NH4 MG/L	TKN MG/L
4/27/76	1145.	0.0		0.028	<	0.004		0.024		0.13	1.30
4/27/76	1145.	2.0		0.040	<	0.004		0.036	<	0.01	1.51
5/13/76	1015.	0.0		0.219	<	0.004		0.215		0.05	1.47
5/13/76	1015.	3.0		0.193	<	0.004		0.189		0.07	1.47
5/26/76	925.	0.0		2.459		0.079		2.380		0.12	2.69
5/26/76	925.	3.0		3.728		0.124		3.604		0.44	3.68
6/15/76	1300.	0.0		1.377		0.100		1.277		0.24	3.38
6/15/76	1300.	3.0		1.796		0.095		1.701		0.28	3.39
7/13/76	1442.	0.0	<	0.004	<	0.004	<	0.004	<	0.06	1.44
7/13/76	1442.	3.0		0.014	<	0.004		0.010		0.07	1.43
8/17/76	1100.	0.0		0.736		0.181		0.555		0.08	2.70
8/17/76	1100.	3.0		0.721		0.208		0.513		0.21	2.81
9/14/76	1015.	0.0		0.724		0.077		0.647		0.16	2.69
9/14/76	1015.	3.5		0.605		0.091		0.514		0.37	3.11
9/28/76	950.	0.0		0.245		0.027		0.218		0.13	1.63
9/28/76	950.	3.5		0.718		0.099		0.619		0.75	3.79
10/13/76	920.	0.0		0.638		0.008		0.630		0.10	2.50
10/13/76	920.	4.0		0.104						0.05	2.40
1/ 4/77	1044.	0.0		0.200		0.016		0.184		0.16	1.22
1/ 4/77	1044.	3.5		0.214		0.043		0.171		0.17	1.29
3/ 9/77	1405.	0.0		0.153		0.005		0.148		0.13	2.16
3/ 9/77	1405.	1.5		0.142		0.006		0.136		0.06	2.03
6/16/77	1220.	0.0		0.149		0.004		0.145		0.02	2.03
6/16/77	1220.	3.0		0.155		0.004		0.151		0.04	1.82
7/13/77	1410.	0.0		0.451		0.047		0.404		0.16	1.89
7/13/77	1410.	2.5		0.467		0.048		0.419		0.16	2.05
8/16/77	1407.	0.0		1.108		0.176		0.932		0.39	3.87
8/16/77	1407.	2.0		1.151		0.176		0.975		0.39	3.17

ANALYTICAL DATA AT BPS-1 (CONTINUED)

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/27/76	1145.	0.0	0.029	0.039		107.3	2.98
4/27/76	1145.	2.0	0.010	0.031		105.9	3.15
5/13/76	1015.	0.0	0.028	0.061	65.1	94.1	2.62
5/13/76	1015.	3.0	0.030	0.058	68.9	95.3	2.72
5/26/76	925.	0.0	0.028	0.049		145.1	4.02
5/26/76	925.	3.0	0.058	0.090		202.5	4.94
6/15/76	1300.	0.0	0.038	0.048		162.3	8.56
6/15/76	1300.	3.0	0.046	0.054		163.1	1.33
7/13/76	1442.	0.0	0.021	0.047		105.2	2.85
7/13/76	1442.	3.0	0.029	0.047		127.6	3.03
8/17/76	1100.	0.0	0.036	0.102	107.3	183.6	5.92
8/17/76	1100.	3.0	0.058	0.091	104.2	199.9	6.37
9/14/76	1015.	0.0	0.030	0.064	119.6	160.4	6.90
9/14/76	1015.	3.5	0.071	0.090	151.1	230.5	7.48
9/28/76	950.	0.0	0.032	0.068	62.8	108.2	4.38
9/28/76	950.	3.5	0.080	0.111	161.8	310.6	9.51
10/13/76	920.	0.0	0.016	0.037	82.3	137.5	4.05
10/13/76	920.	4.0	0.021	0.031	87.2	130.7	3.40
1/ 4/77	1044.	0.0	0.008	0.041	85.9	137.1	3.67
1/ 4/77	1044.	3.5	0.009	0.039	94.3	142.5	2.71
3/ 9/77	1405.	0.0	0.015	0.060	66.4	98.8	3.05
3/ 9/77	1405.	1.5	0.020	0.060	66.9	99.4	3.09
6/16/77	1220.	0.0	0.020	0.064	47.9	95.9	2.72
6/16/77	1220.	3.0	0.035	0.066	48.2	95.5	2.66
7/13/77	1410.	0.0	0.014	0.045	62.4	120.8	3.55
7/13/77	1410.	2.5	0.005	0.038	62.7	121.2	3.58
8/16/77	1407.	0.0	0.051	0.099	124.1	155.0	5.04
8/16/77	1407.	2.0	0.072	0.109	122.0	154.6	5.02

ANALYTICAL DATA AT BPS-1 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/27/76	1145.	0.0	74.59		51.13	18.87
4/27/76	1145.	2.0	73.04		50.96	18.45
5/13/76	1015.	0.0	44.33	2.70	29.75	10.02
5/13/76	1015.	3.0	67.59	4.28	52.63	17.52
5/26/76	925.	0.0	102.98		47.45	34.28
5/26/76	925.	3.0	143.85		94.79	38.99
6/15/76	1300.	0.0	119.20		131.97	44.92
6/15/76	1300.	3.0	116.56		125.53	45.00
7/13/76	1442.	0.0	73.18		49.74	19.22
7/13/76	1442.	3.0	82.74		51.41	20.41
8/17/76	1100.	0.0	131.99	8.01	87.94	37.14
8/17/76	1100.	3.0	140.80	8.61	89.04	36.56
9/14/76	1015.	0.0	116.93	6.50	108.25	35.73
9/14/76	1015.	3.5	192.68	8.35	116.46	39.48
9/28/76	950.	0.0	75.18	4.76	61.71	23.45
9/28/76	950.	3.5	193.11	8.01	130.81	52.76
10/13/76	930.	0.0	96.26	6.18	78.17	32.66
10/13/76	920.	4.0	90.77	6.27	73.88	29.89
1/ 4/77	1044.	0.0	96.77	6.31	50.96	
1/ 4/77	1044.	3.5	101.09	6.33	51.92	23.36
3/ 9/77	1405.	0.0	63.53	6.64	59.43	20.82
3/ 9/77	1405.	1.5	62.59	6.52	56.64	20.82
6/16/77	1220.	0.0	63.82	4.02	47.25	20.00
6/16/77	1220.	3.0	65.53	4.14	45.64	19.32
7/13/77	1410.	0.0	69.57	4.99	51.29	28.38
7/13/77	1410.	2.5	57.85	4.95	56.08	27.99
8/16/77	1407.	0.0	107.54	6.11	93.32	35.65
8/16/77	1407.	2.0	105.77	6.13	93.32	27.12

ANALYTICAL DATA AT BPS-1 (CONTINUED)

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/27/76	1145.	0.0			
4/27/76	1145.	2.0			
5/13/76	1015.	0.0		76.7	
5/13/76	1015.	3.0			
5/26/76	925.	0.0			
5/26/76	925.	3.0			
6/15/76	1300.	0.0			
6/15/76	1300.	3.0			
7/13/76	1442.	0.0	2.4		
7/13/76	1442.	3.0	2.7		
8/17/76	1100.	0.0	7.4		
8/17/76	1100.	2.0	16.0		
9/14/76	1015.	0.0	2.8	10.0	
9/14/76	1015.	3.5	8.1	12.0	
9/28/76	950.	0.0	8.3	6.0	
9/28/76	950.	3.5	7.6	7.0	
10/13/76	920.	0.0	11.0	6.0	
10/13/76	920.	4.0	12.0	26.0	
1/ 4/77	1044.	0.0	10.0		0.15
1/ 4/77	1044.	3.5	3.0		0.14
3/ 9/77	1405.	0.0	8.6	16.0	0.15
3/ 9/77	1405.	1.5	6.4	66.0	0.15
6/16/77	1220.	0.0	3.5	12.0	0.20
6/16/77	1220.	3.0	5.5	9.0	0.23
7/13/77	1410.	0.0		8.0	0.03
7/13/77	1410.	2.5		3.0	0.03
8/16/77	1407.	0.0	1.7	11.0	0.05
8/16/77	1407.	2.0	2.0	9.0	0.06

ANALYTICAL DATA AT BPS-2

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/27/76	1252.	0.0	0.069	0.005	0.064	0.05	1.45
4/27/76	1252.	6.0	0.040	< 0.004	0.036	0.06	1.49
5/11/76	1230.	0.0	0.230	0.007	0.223	0.06	1.58
5/11/76	1230.	6.0	0.234	0.008	0.226	0.09	1.57
5/24/76	900.	0.0	4.652	0.204	4.448	0.53	4.60
5/24/76	900.	2.5	4.698	0.204	4.494	0.52	4.67
6/15/76	922.	0.0	0.795	0.056	0.739	0.06	2.80
6/15/76	922.	4.0	0.869	0.057	0.812	0.09	2.79
7/13/76	953.	0.0	1.252	0.078	1.174	0.48	3.44
7/13/76	953.	5.0	1.142	0.079	1.063	0.49	3.34
8/17/76	902.	0.0	2.925	0.147	2.778	0.53	4.00
8/17/76	902.	4.0	2.808	0.148	2.660	0.52	4.28
9/14/76	940.	0.0	2.069	0.084	1.985	0.50	3.11
9/14/76	940.	5.0	2.116	0.085	2.031	0.50	3.49
9/28/76	915.	0.0	0.790	0.099	0.691	0.80	3.68
9/28/76	915.	4.0	0.760	0.092	0.668		3.64
10/13/76	1512.	0.0					2.46
10/13/76	1512.	3.0	0.101	0.006	0.095	0.05	2.54
1/ 4/77	1007.	0.0	0.616	0.064	0.552	0.27	2.48
1/ 4/77	1007.	4.0	0.838	< 0.004	0.834	0.39	2.95
3/ 9/77	1000.	0.0	0.148	< 0.004	0.144	0.11	2.78
3/ 9/77	1000.	3.0	0.178	< 0.004	0.174	0.07	1.94
6/16/77	1045.	0.0	0.041	0.008	0.033	0.05	2.30
6/16/77	1045.	2.8	0.038	0.008	0.030	0.05	2.25
7/13/77	1315.	0.0	0.028	0.008	0.020	0.06	1.37
7/13/77	1315.	2.5	0.023	0.008	0.015	0.07	2.26
8/16/77	1310.	0.0	1.403	0.096	1.307	0.18	2.56
8/16/77	1310.	6.0	1.651	0.105	1.546	0.37	2.76

ANALYTICAL DATA AT BPS-2 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/27/76	1252.	0.0	0.004	0.038		111.7	3.33
4/27/76	1252.	6.0	0.004	0.028		116.8	3.54
5/11/76	1230.	0.0	0.026	0.052	61.8	98.1	2.71
5/11/76	1230.	6.0	0.035	0.057	65.1	98.1	2.77
5/24/76	900.	0.0	0.066	0.136		139.9	6.49
5/24/76	900.	2.5	0.066	0.139		139.5	6.51
6/15/76	923.	0.0	0.017	0.041		139.0	6.21
6/15/76	923.	4.0	0.019	0.039		140.0	6.45
7/13/76	953.	0.0	0.090	0.100		133.2	5.91
7/13/76	953.	5.0	0.092	0.101		132.2	6.03
8/17/76	902.	0.0	0.077	0.104	121.6	184.2	8.41
8/17/76	902.	4.0	0.077	0.103	122.4	183.4	8.70
9/14/76	940.	0.0	0.090	0.102	93.9	163.5	
9/14/76	940.	5.0	0.098	0.101	91.4	163.9	8.67
9/28/76	915.	0.0	0.054	0.089	126.4	175.0	10.91
9/28/76	915.	4.0	0.057	0.095	128.0	174.6	10.63
10/13/76	1512.	0.0		0.021			
10/13/76	1512.	3.0	0.006	0.021	86.7	131.9	3.55
1/ 4/77	1007.	0.0	0.036	0.059	78.6	167.9	5.57
1/ 4/77	1007.	4.0	0.061	0.083	86.2	220.8	6.99
2/ 8/77	1000.	0.0	0.011	0.087	64.9	101.8	3.20
2/ 8/77	1000.	2.5	0.007	0.087	65.1	99.4	3.10
5/16/77	1045.	0.0	0.017	0.075	83.3	107.5	2.65
5/16/77	1045.	3.6	0.014	0.073	84.5	108.3	2.60
7/12/77	1315.	0.0	< 0.002	0.024	69.6	113.2	2.34
7/12/77	1315.	2.5	< 0.002	0.023	69.5	112.8	2.29
8/16/77	1210.	0.0	0.014	0.062	86.2	121.8	3.83
8/16/77	1210.	6.0	0.028	0.081	91.2	134.5	4.62

ANALYTICAL DATA AT BPS-2 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/27/76	1252.	0.0	75.30		52.66	19.42
4/27/76	1252.	6.0	79.12		54.19	20.74
5/11/76	1230.	0.0	70.23	4.20	51.00	18.23
5/11/76	1230.	6.0	68.37	4.32	44.29	20.04
5/24/76	900.	0.0	96.85		126.40	47.30
5/24/76	900.	2.5	97.87		125.08	47.30
6/15/76	923.	0.0	95.93		106.57	37.58
6/15/76	923.	4.0	96.78		107.46	37.83
7/13/76	953.	0.0	98.68		97.87	37.60
7/13/76	953.	5.0	96.93	0.54	98.02	37.69
8/17/76	902.	0.0	134.32	8.02	127.19	47.18
8/17/76	902.	4.0	131.08	8.21	121.67	47.18
9/14/76	940.	0.0	120.15	6.60	139.96	40.53
9/14/76	940.	5.0	117.74	6.28	132.24	40.31
9/28/76	915.	0.0	122.97	6.88	141.10	52.85
9/28/76	915.	4.0	123.60	6.09	140.80	52.59
10/13/76	1512.	0.0	92.97	6.19	73.88	30.61
10/13/76	1512.	3.0	93.28	5.87	68.80	30.31
1/ 4/77	1007.	0.0	115.25	7.63	71.80	30.20
1/ 4/77	1007.	4.0	140.29	8.77	93.35	35.90
3/ 8/77	1000.	0.0	63.06	6.36	56.94	20.95
3/ 8/77	1000.	3.0	62.90	6.33	56.50	20.91
6/16/77	1045.	0.0	77.26	4.29	46.16	21.91
6/16/77	1045.	2.8	76.58	4.27	44.28	22.29
7/13/77	1315.	0.0	81.25	4.99	36.46	23.29
7/13/77	1315.	2.5	78.42	4.76	37.12	23.08
8/16/77	1310.	0.0	77.[illegible]	4.[illegible]	81.79	24.[illegible]
8/16/77	1310.	6.0	80.79	5.15	59.75	26.32

ANALYTICAL DATA AT BPS-2 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/27/76	1252.	0.0			
4/27/76	1252.	6.0			
5/11/76	1230.	0.0		72.3	
5/11/76	1230.	6.0		53.6	
5/24/76	900.	0.0			
5/24/76	900.	2.5			
6/15/76	923.	0.0			
6/15/76	923.	4.0			
7/13/76	953.	0.0	3.1		
7/13/76	953.	5.0	4.8		
8/17/76	902.	0.0	4.4		
8/17/76	902.	4.0	7.8		
9/14/76	940.	0.0	8.4	22.0	
9/14/76	940.	5.0	12.0	27.0	
9/28/76	915.	0.0	3.8	3.0	
9/28/76	915.	4.0	2.6	7.0	
10/13/76	1512.	0.0	5.2	6.0	
10/13/76	1512.	3.0	16.0	5.0	
1/ 4/77	1007.	0.0	12.0		0.20
1/ 4/77	1007.	4.0	11.0		0.23
3/ 8/77	1000.	0.0	15.0	27.0	0.30
3/ 8/77	1000.	3.0	15.0	33.0	0.41
6/16/77	1045.	0.0	4.0	12.0	0.17
6/16/77	1045.	2.5	4.2	13.0	0.18
7/13/77	1315.	0.0		7.0	0.03
7/13/77	1315.	2.8		[illegible]	0.04
8/16/77	1310.	0.0	2.9	11.0	0.10
8/16/77	1310.	[illegible]	4.[illegible]	10.0	[illegible]

ANALYTICAL DATA AT BPS-3

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/27/76	1400.	0.0	0.005	< 0.004	< 0.004	< 0.01	1.54
4/27/76	1400.	3.0	< 0.004	< 0.004	< 0.004	< 0.01	1.49
5/11/76	1305.	0.0	0.029	0.004	0.025	0.01	1.57
5/11/76	1305.	3.5	0.054	0.004	0.050	0.05	1.57
5/24/76	925.	0.0	4.601	0.383	4.218	0.55	4.67
5/24/76	925.	2.0	4.520	0.378	4.142	0.50	4.67
6/15/76	955.	0.0	0.592	0.038	0.554	0.04	2.66
6/15/76	955.	3.0	0.753	0.043	0.710	0.10	2.90
7/13/76	1037.	0.0	1.119	0.161	0.958	0.30	3.25
7/13/76	1037.	4.0	1.247	0.190	1.057	0.31	3.37
8/17/76	936.	0.0	1.375	0.120	1.255	0.80	4.35
8/17/76	936.	3.0	1.756	0.127	1.629	0.82	4.12
9/14/76	215.	0.0	1.782	0.092	1.690	0.49	2.78
9/14/76	215.	5.0	1.749	0.101	1.648	0.71	3.07
9/28/76	1325.	0.0	0.514	0.035	0.479	< 0.01	2.52
9/28/76	1325.	3.5	0.572	0.050	0.522	0.09	2.27
10/13/76	1442.	0.0	0.130	< 0.004	0.126	0.02	1.24
10/13/76	1442.	3.0	0.114	0.005	0.109	0.02	1.78
1/ 4/77	1513.	0.0	0.292	0.020	0.272	0.14	1.82
1/ 4/77	1513.	3.0	0.362	0.011	0.351	0.22	2.02
3/ 8/77	1140.	0.0	0.146	0.005	0.141	0.14	3.72
3/ 8/77	1140.	3.5	0.122	< 0.004	0.118	0.09	2.29
6/15/77	1025.	0.0	0.044	0.010	0.034	0.05	2.50
6/15/77	1025.	3.5	0.077	0.011	0.066	0.09	2.36
7/13/77	1300.	0.0	0.013	0.006	0.007	0.05	2.21
7/13/77	1300.	2.0	0.016	0.006	0.010	0.06	2.50
8/16/77	1255.	0.0	1.849	0.087	1.761	0.33	2.48
8/16/77	1255.	2.0	1.856	0.086	1.770	0.31	2.70

ANALYTICAL DATA AT BPS-3 (CONTINUED)

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/27/76	1400.	0.0	0.003	0.024		121.2	3.41
4/27/76	1400.	3.0	< 0.002	0.022		116.8	3.54
5/11/76	1305.	0.0	< 0.002	0.018	65.6	104.4	2.54
5/11/76	1305.	3.5	< 0.002	0.020	66.3	104.4	2.53
5/24/76	925.	0.0	0.063	0.108		138.7	6.65
5/24/76	925.	2.0	0.059	0.158		139.1	6.55
6/15/76	955.	0.0	0.011	0.032		135.2	5.76
6/15/76	955.	3.0	0.014	0.030		141.0	6.19
7/13/76	1037.	0.0	0.067	0.101		159.3	7.73
7/13/76	1037.	4.0	0.064	0.083		167.3	8.25
8/17/76	936.	0.0	0.098	0.131	83.8	224.6	8.70
8/17/76	936.	3.0	0.100	0.128	88.7	219.1	8.86
9/14/76	215.	0.0	0.055	0.070	95.8	167.3	8.67
9/14/76	215.	5.0	0.057	0.071	98.8	179.7	8.90
9/28/76	1325.	0.0	0.016	0.064	80.5	123.4	6.03
9/28/76	1325.	3.5	0.026	0.060	80.7	126.9	6.45
10/13/76	1442.	0.0	0.014	0.024	73.9	117.4	2.90
10/13/76	1442.	3.0	0.003	0.020	89.7	136.7	4.32
1/ 4/77	1513.	0.0	0.003	0.041	83.8	119.2	4.33
1/ 4/77	1513.	3.0	0.006	0.052	74.0	122.9	4.60
3/ 8/77	1140.	0.0	0.006	0.056	64.4	99.2	3.06
3/ 8/77	1140.	3.0	0.008	0.067	65.1	99.6	3.10
6/16/77	1025.	0.0	0.002	0.060	67.0	116.5	3.21
6/16/77	1025.	3.5	< 0.002	0.050	77.9	119.1	3.29
7/13/77	1300.	0.0	< 0.002	0.027	70.8	114.2	1.89
7/13/77	1300.	2.0	< 0.002	0.031	71.0	114.8	1.90
8/16/77	1255.	0.0	0.055	0.086	57.9	122.4	4.55
8/16/77	1255.	2.0	0.060	0.093	96.7	122.2	4.53

ANALYTICAL DATA AT BPS-3 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/27/76	1400.	0.0	75.83		53.34	20.82
4/27/76	1400.	3.0	78.98		54.71	21.16
5/11/76	1305.	0.0	72.55	4.22	46.75	21.18
5/11/76	1305.	3.5	70.54	4.48	46.25	21.10
5/24/76	925.	0.0	94.95		126.57	47.34
5/24/76	925.	2.0	94.37		124.91	47.76
6/15/76	955.	0.0	85.79		101.38	36.89
6/15/76	955.	3.0	96.78		105.32	37.66
7/13/76	1037.	0.0	107.67		108.65	42.69
7/13/76	1037.	4.0	115.84		114.87	42.94
8/17/76	936.	0.0	151.99	8.52	118.99	42.31
8/17/76	936.	3.0	149.39	8.74	110.01	42.82
9/14/76	215.	0.0	121.60	6.65	134.97	40.75
9/14/76	215.	5.0	125.46	6.75	131.11	42.93
9/28/76	1325.	0.0	85.18	6.00	91.65	29.32
9/28/76	1325.	3.5	87.56	6.08	97.64	30.68
10/13/76	1442.	0.0	81.51	5.45	62.61	25.07
10/13/76	1442.	3.0	98.62	6.20	76.26	31.62
1/ 4/77	1513.	0.0	81.87	6.29	62.48	26.05
1/ 4/77	1513.	3.0	86.19	6.39	66.64	25.68
3/ 8/77	1140.	0.0	62.90	6.28	56.50	20.70
3/ 8/77	1140.	2.5	61.01	6.32	55.32	20.40
6/16/77	1025.	0.0	81.35	4.92	48.97	25.56
6/16/77	1025.	2.5	87.64	5.31	53.03	26.46
7/13/77	1300.	0.0	82.35	5.04	31.70	22.44
7/13/77	1300.	2.0	81.56	4.90	32.02	22.44
8/16/77	1255.	0.0	77.54	5.51	93.32	24.61
8/16/77	1255.	2.0	78.18	6.52	92.02	24.82

ANALYTICAL DATA AT BPS-3 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/27/76	1400.	0.0			
4/27/76	1400.	3.0			
5/11/76	1305.	0.0		43.3	
5/11/76	1305.	3.5		27.1	
5/24/76	925.	0.0			
5/24/76	925.	2.0			
6/15/76	955.	0.0			
6/15/76	955.	3.0			
7/13/76	1037.	0.0	2.8		
7/13/76	1037.	4.0	3.3		
8/17/76	936.	0.0	2.4		
8/17/76	936.	3.0	6.7		
9/14/76	215.	0.0	3.9	11.0	
9/14/76	215.	5.0	2.9	14.0	
9/28/76	1325.	0.0	3.9	4.0	
9/28/76	1325.	3.5	5.4	15.0	
10/13/76	1442.	0.0	15.0	21.0	
10/13/76	1442.	3.0	16.0	35.0	
1/ 4/77	1513.	0.0	15.0		0.14
1/ 4/77	1513.	3.0	4.5		0.18
3/ 8/77	1140.	0.0	8.2	19.0	0.09
3/ 8/77	1140.	3.5	3.8	24.0	0.30
6/16/77	1025.	0.0	2.2	11.0	0.16
6/16/77	1025.	2.5	2.7	10.0	0.17
7/13/77	1300.	0.0		10.0	< 0.02
7/13/77	1300.	2.0		2.0	0.04
8/16/77	1255.	0.0	1.8	11.0	0.06
8/16/77	1255.	2.0	1.7	3.0	0.05

ANALYTICAL DATA AT BPS-4

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/27/76	1505.	0.0	0.026	< 0.004	0.022	0.03	1.45
4/27/76	1505.	4.0	0.026	0.005	0.021	0.08	1.62
5/11/76	1340.	0.0	0.051	< 0.004	0.047	0.03	1.61
5/11/76	1340.	3.5	0.236	0.005	0.231	0.05	1.53
5/24/76	955.	0.0	3.689	0.167	3.521	0.57	4.68
5/24/76	955.	2.7	3.703	0.166	3.537	0.63	4.36
6/15/76	1030.	0.0	0.519	0.015	0.504	0.04	2.83
6/15/76	1030.	4.0	0.513	0.015	0.498	0.05	2.69
7/13/76	1127.	0.0	1.280	0.197	1.083	< 0.06	3.49
7/13/76	1127.	4.0	1.183	0.205	0.978	0.34	3.11
8/17/76	1010.	0.0	0.111	0.016	0.095	0.05	1.89
8/17/76	1010.	4.0	0.150	0.016	0.134	0.11	2.13
9/14/76	1200.	0.0	1.230	0.065	1.165	0.05	2.52
9/14/76	1200.	4.5	1.847	0.067	1.780	0.22	2.87
9/28/76	1130.	0.0	0.354	0.021	0.333	0.02	1.88
9/28/76	1130.	4.5	0.430	0.025	0.405	0.07	2.04
10/13/76	1402.	0.0	0.055	0.006	0.049	0.12	1.77
10/13/76	1402.	4.5	0.047	0.006	0.041	0.14	1.91
1/ 4/77	1443.	0.0	0.244	0.015	0.229	0.14	1.49
1/ 4/77	1443.	4.5	0.236	0.015	0.221	0.16	1.49
3/ 8/77	1205.	0.0	0.122	< 0.004	0.118	0.08	2.48
3/ 8/77	1206.	4.0	0.093	0.004	0.089	0.09	2.66
6/16/77	1000.	0.0	0.119	0.018	0.101	0.15	2.28
6/16/77	1000.	3.2	0.130	0.018	0.112	0.17	2.39
7/13/77	1240.	0.0	0.007	< 0.004	< 0.004	0.04	1.56
7/13/77	1240.	4.0	0.010	< 0.004	0.006	0.04	1.83
8/16/77	1226.	0.0	0.616	0.049	0.567	0.21	1.82
8/16/77	1226.	4.0	0.723	0.049	0.674	0.22	2.08

ANALYTICAL DATA AT BPS-4 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/27/76	1505.	0.0	< 0.002	0.020		110.7	3.20
4/27/76	1505.	4.0	< 0.002	0.018		118.3	3.36
5/11/76	1340.	0.0	< 0.002	0.018	67.6	105.6	2.45
5/11/76	1340.	3.5	< 0.002	0.017	68.1	106.6	2.48
5/24/76	955.	0.0	0.072	0.103		146.1	6.13
5/24/76	955.	2.7	0.069	0.108		145.9	6.38
6/15/76	1030.	0.0	0.014	0.032		139.2	5.86
6/15/76	1030.	4.0	0.016	0.027		139.2	5.68
7/13/76	1137.	0.0	0.012	0.104		167.1	8.70
7/13/76	1137.	4.0	0.045	0.069		179.1	8.69
8/17/76	1010.	0.0	0.008	0.044	68.2	119.8	3.33
8/17/76	1010.	4.0	0.017	0.036	74.3	119.8	3.31
9/14/76	1200.	0.0	0.027	0.052	86.7	121.0	5.35
9/14/76	1200.	4.5	0.037	0.048	102.5	124.3	5.65
9/28/76	1130.	0.0	0.006	0.056	81.7	123.2	5.54
9/28/76	1130.	4.5	0.020	0.046	80.5	123.6	5.72
10/12/76	1402.	0.0	< 0.002	0.020	83.4	126.5	3.79
10/12/76	1402.	4.5	< 0.002	0.021	84.4	125.3	3.61
1/ 4/77	1443.	0.0	0.009	0.038	67.9	109.1	3.88
1/ 4/77	1443.	4.5	< 0.002	0.032	67.9	109.1	3.98
3/ 8/77	1205.	0.0	0.004	0.048	63.8	100.2	3.05
3/ 8/77	1206.	4.0	0.046	0.045	57.1	99.8	3.15
6/16/77	1000.	0.0	0.018	0.065	69.9	122.5	3.42
6/16/77	1000.	3.2	0.028	0.056	70.6	123.5	3.35
7/13/77	1240.	0.0	< 0.002	0.023	71.3	115.2	1.67
7/13/77	1240.	4.0	< 0.002	0.025	70.8	115.2	1.60
8/16/77	1336.	0.0	0.104	0.115	66.0	115.4	3.18
8/16/77	1336.	4.0	0.078	0.113	64.7	116.6	3.18

ANALYTICAL DATA AT BPS-4 (CONTINUED)

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/27/76	1505.	0.0	76.01		54.19	19.72
4/27/76	1505.	4.0	80.82		55.05	21.20
5/11/76	1340.	0.0	68.27	4.47	43.97	21.18
5/11/76	1340.	3.5	73.32	4.24	43.97	20.66
5/24/76	955.	0.0	102.83		123.26	48.68
5/24/76	955.	2.7	101.81		124.91	48.31
6/15/76	1030.	0.0	95.90		99.05	38.43
6/15/76	1030.	4.0	93.12		92.97	37.45
7/13/76	1137.	0.0	118.46		123.68	41.83
7/13/76	1137.	4.0	118.61		120.19	44.47
8/17/76	1010.	0.0	79.21	5.93	53.74	25.77
8/17/76	1010.	4.0	79.21	5.98	52.79	25.69
9/14/76	1200.	0.0	84.76	5.67	115.01	26.10
9/14/76	1200.	4.5	78.00	5.10	105.35	26.23
9/28/76	1130.	0.0	85.02	5.82	84.74	29.27
9/28/76	1130.	4.5	85.92	6.04	87.20	28.89
10/13/76	1402.	0.0	92.97	6.25	67.85	27.67
10/13/76	1402.	4.5	84.51	6.14	66.42	28.43
1/ 4/77	1443.	0.0	75.76	6.10	58.64	22.55
1/ 4/77	1443.	4.5	76.20	6.18	59.60	22.79
3/ 9/77	1206.	0.0	61.49	6.30	52.24	20.27
3/ 9/77	1206.	4.0	63.69	6.33	55.91	20.40
6/16/77	1000.	0.0	89.34	4.87	54.12	26.16
6/16/77	1000.	3.2	89.34	4.99	56.62	26.46
7/13/77	1240.	0.0	79.67	5.00	27.40	22.02
7/13/77	1240.	4.0	79.99	4.97	23.73	21.68
8/16/77	1236.	0.0	74.81	6.09	63.12	20.13
8/16/77	1236.	4.0	74.49	6.29	64.26	21.05

ANALYTICAL DATA AT BPS-4 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/27/76	1505.	0.0			
4/27/76	1505.	4.0			
5/11/76	1340.	0.0		60.8	
5/11/76	1340.	3.5		55.9	
5/24/76	955.	0.0			
5/24/76	955.	2.7			
6/15/76	1030.	0.0			
6/15/76	1030.	4.0			
7/13/76	1137.	0.0	2.8		
7/13/76	1137.	4.0			
8/17/76	1010.	0.0	1.6		
8/17/76	1010.	4.0	5.4		
9/14/76	1200.	0.0	2.4	9.0	
9/14/76	1200.	4.5	4.6	10.0	
9/28/76	1130.	0.0	3.5	3.0	
9/28/76	1130.	4.5	3.6	9.0	
10/13/76	1402.	0.0	5.6	4.0	
10/13/76	1402.	4.5	5.6	8.0	
1/ 4/77	1443.	0.0	12.0		0.10
1/ 4/77	1443.	4.5	14.0		0.11
3/ 8/77	1205.	0.0	6.5	10.0	0.12
3/ 8/77	1206.	4.0	1.2	5.0	0.10
6/16/77	1000.	0.0	1.4	9.0	0.15
6/16/77	1000.	3.2	5.0	17.0	0.16
7/13/77	1240.	0.0		14.0	0.08
7/13/77	1240.	4.0		4.0	0.04
8/16/77	1236.	0.0	1.8	6.0	0.04
8/16/77	1236.	4.0	1.9	10.0	0.04

ANALYTICAL DATA AT BPS-5

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/27/76	1550.	0.0	< 0.004	< 0.004	< 0.004	< 0.01	1.27
4/27/76	1550.	7.0	0.012	< 0.004	0.008	0.06	1.34
5/11/76	1425.	0.0	0.015	< 0.004	0.011	< 0.01	1.55
5/11/76	1425.	8.0	0.019	< 0.004	0.015	0.12	2.00
5/24/76	1055.	0.0	2.937	0.163	2.774	0.49	4.18
5/24/76	1055.	4.5	3.018	0.166	2.852	0.50	4.26
6/15/76	1055.	0.0	0.334	0.012	0.322	0.03	2.62
6/15/76	1055.	4.0	0.376	0.012	0.364	0.05	2.59
7/14/76	1215.	0.0	1.119	0.200	0.919	0.24	3.21
7/14/76	1215.	6.0	1.275	0.251	1.024	0.42	3.37
8/17/76	1340.	0.0	0.095	0.012	0.083	0.02	1.92
8/17/76	1340.	5.0	0.537	0.012	0.525	0.18	2.02
9/16/76	1035.	0.0	2.779	0.090	2.689	0.28	3.21
9/16/76	1035.	5.5	2.506	0.093	2.413	0.31	3.30
9/30/76	1000.	0.0	0.272	0.019	0.253	< 0.01	1.88
9/30/76	1000.	5.0	0.330	0.025	0.305	0.15	2.16
10/14/76	1331.	0.0	0.057	0.005	0.052	< 0.01	1.78
10/14/76	1331.	4.0	0.069	0.006	0.063	0.02	1.75
1/ 4/77	1340.	0.0	0.173	0.011	0.162	0.18	1.22
1/ 4/77	1340.	7.5	0.164	0.010	0.154	0.18	1.46
3/ 8/77	1225.	0.0	0.134	< 0.004	0.130	< 0.01	1.71
3/ 8/77	1225.	5.5	0.193	< 0.004	0.189	< 0.01	2.53
6/16/77	900.	0.0	0.203	0.035	0.168	0.12	2.77
6/16/77	900.	7.3	0.184	0.035	0.149	0.14	2.62
7/13/77	1220.	0.0	0.008	< 0.004	0.004	0.05	1.88
7/13/77	1220.	4.0	0.008	< 0.004	0.004	0.02	1.41
8/16/77	1200.	0.0	0.366	0.034	0.332	0.13	1.57
8/16/77	1200.	5.0	0.346	0.035	0.311	0.18	1.81

ANALYTICAL DATA AT BPS-3

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/27/76	1400.	0.0	0.005	< 0.004	< 0.004	< 0.01	1.54
4/27/76	1400.	3.0	< 0.004	< 0.004	< 0.004	< 0.01	1.49
5/11/76	1305.	0.0	0.029	0.004	0.025	0.01	1.57
5/11/76	1305.	2.5	0.054	0.004	0.050	0.05	1.57
5/24/76	925.	0.0	4.601	0.383	4.218	0.55	4.67
5/24/76	925.	2.0	4.520	0.378	4.142	0.50	4.67
6/15/76	955.	0.0	0.592	0.038	0.554	0.04	2.66
6/15/76	955.	3.0	0.753	0.043	0.710	0.10	2.90
7/13/76	1037.	0.0	1.119	0.161	0.958	0.30	3.35
7/13/76	1037.	4.0	1.247	0.190	1.057	0.31	3.37
8/17/76	936.	0.0	1.375	0.120	1.255	0.80	4.35
8/17/76	936.	3.0	1.756	0.127	1.629	0.82	4.12
9/14/76	215.	0.0	1.782	0.092	1.690	0.49	2.78
9/14/76	215.	5.0	1.749	0.101	1.648	0.71	3.07
9/28/76	1325.	0.0	0.514	0.035	0.479	< 0.01	2.52
9/28/76	1325.	3.5	0.572	0.050	0.522	0.09	2.27
10/13/76	1442.	0.0	0.130	< 0.004	0.126	0.02	1.24
10/13/76	1442.	3.0	0.114	0.005	0.109	0.02	1.78
1/ 4/77	1513.	0.0	0.292	0.020	0.272	0.14	1.82
1/ 4/77	1513.	3.0	0.362	0.011	0.351	0.22	2.02
3/ 8/77	1140.	0.0	0.146	0.005	0.141	0.14	3.72
3/ 8/77	1140.	3.5	0.122	< 0.004	0.118	0.09	2.29
6/16/77	1025.	0.0	0.044	0.010	0.034	0.05	2.50
6/16/77	1025.	3.5	0.077	0.011	0.066	0.09	2.36
7/13/77	1300.	0.0	0.013	0.006	0.007	0.05	2.21
7/13/77	1300.	2.0	0.016	0.006	0.010	0.06	2.50
8/16/77	1255.	0.0	1.849	0.087	1.761	0.33	2.48
8/16/77	1255.	2.0	1.856	0.086	1.770	0.31	2.70

ANALYTICAL DATA AT BPS-5 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/27/76	1550.	0.0	72.61		45.56	16.28
4/27/76	1550.	7.0	73.47		46.20	18.74
5/11/76	1425.	0.0	72.71	4.14	55.57	20.00
5/11/76	1425.	6.0	77.98	4.21	43.46	21.45
5/24/76	1055.	0.0	97.14		117.13	41.53
5/24/76	1055.	4.5	96.41		113.66	23.62
6/15/76	1055.	0.0	96.93		92.79	38.86
6/15/76	1055.	4.0	95.02		91.00	37.45
7/14/76	1215.	0.0	113.36		117.61	40.30
7/14/76	1215.	6.0	117.88		124.89	45.32
8/17/76	1340.	0.0	84.07	6.21	55.00	26.36
8/17/76	1340.	5.0	78.88	5.77	50.90	25.73
9/16/76	1035.	0.0	92.50	5.44	129.82	30.59
9/16/76	1035.	5.5	93.12	5.47	131.43	30.94
9/30/76	1000.	0.0	85.66	6.06	83.36	28.76
9/30/76	1000.	5.0	86.77	6.20	84.74	29.53
10/14/76	1331.	0.0	90.77	5.42	66.74	27.84
10/14/76	1331.	4.0	91.09	5.54	67.22	27.17
1/ 4/77	1340.	0.0	69.79	5.86	55.92	21.53
1/ 4/77	1340.	7.5	69.79	5.89	55.76	21.45
3/ 8/77	1235.	0.0	62.74	5.27	55.32	20.32
3/ 8/77	1235.	5.5	57.56	6.13	52.09	19.96
6/16/77	900.	0.0	98.02	5.14	61.47	28.07
6/16/77	900.	7.3	99.21	5.10	61.47	27.30
7/13/77	1220.	0.0	75.99	4.95	23.57	21.68
7/13/77	1220.	4.0	75.55	4.52	23.57	20.83
8/16/77	1200.	0.0	72.09	5.85	55.98	21.10
8/16/77	1200.	5.0	74.81	5.79	57.40	21.56

ANALYTICAL DATA AT BPS-5 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/27/76	1550.	0.0			
4/27/76	1550.	7.0			
5/11/76	1425.	0.0			
5/11/76	1425.	8.0		18.0	
5/24/76	1055.	0.0			
5/24/76	1055.	4.5			
6/15/76	1055.	0.0			
6/15/76	1055.	4.0			
7/14/76	1215.	0.0	1.7		
7/14/76	1215.	6.0	3.2		
8/17/76	1340.	0.0	2.0		
8/17/76	1340.	5.0	5.4		
9/16/76	1035.	0.0	1.8	13.0	
9/16/76	1035.	5.5	3.2	13.0	
9/30/76	1000.	0.0	2.4	3.0	
9/30/76	1000.	5.0	4.6	18.0	
10/14/76	1331.	0.0	4.1	12.0	
10/14/76	1331.	4.0	6.6	27.0	
1/ 4/77	1340.	0.0	12.0		0.08
1/ 4/77	1340.	7.5	12.0		0.13
3/ 8/77	1235.	0.0	8.8	20.0	0.18
3/ 8/77	1235.	5.5	20.0	39.0	0.66
6/16/77	900.	0.0	1.8	11.0	0.15
6/16/77	900.	7.0	1.8	10.0	0.16
7/13/77	1320.	0.0		5.0	0.03
7/13/77	[illegible]	4.0		9.0	< 0.02
8/16/77	1200.	0.0	1.4	10.0	0.03
8/16/77	1200.	5.0	2.7		0.06

ANALYTICAL DATA AT BPS-6

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/27/76	1742.	0.0	0.015	< 0.004	0.011	0.06	1.25
4/27/76	1742.	3.5	0.015	0.004	0.011	0.10	1.35
5/13/76	1215.	0.0	0.307	0.024	0.283	0.34	2.08
5/13/76	1215.	3.5	0.641	0.042	0.599	0.72	2.87
5/26/76	1215.	0.0	3.358	0.257	3.101	0.50	4.47
5/26/76	1215.	3.0	3.358	0.246	3.112	0.56	4.32
6/17/76	930.	0.0	0.043	0.007	0.036	0.05	1.97
6/17/76	930.	3.0	0.046	0.006	0.040	0.04	2.12
7/15/76	1025.	0.0	0.472	0.067	0.405	0.20	1.97
7/15/76	1025.	3.8	0.660	0.084	0.576	0.23	2.24
8/18/76	1100.	0.0	0.306	0.058	0.248	0.20	1.86
8/18/76	1100.	3.0	0.208	0.058	0.150	0.20	1.93
9/15/76	215.	0.0	0.794	0.077	0.717	0.36	2.45
9/15/76	215.	3.0	0.947	0.093	0.854	0.49	2.54
9/29/76	100.	0.0	0.038	0.011	0.027	0.12	1.49
9/29/76	100.	4.0	0.082	0.012	0.070	0.12	1.47
10/15/76	1049.	0.0	0.044	0.006	0.038	0.03	2.59
10/15/76	1049.	5.0	0.122	0.007	0.115	0.05	2.59
1/ 6/77	837.	0.0	0.157	0.011	0.146	0.22	1.29
1/ 6/77	837.	4.0	0.167	0.012	0.155	0.23	2.09
3/ 9/77	1100.	0.0	0.259	0.008	0.251	0.11	1.44
3/ 9/77	1100.	3.5	0.100	0.005	0.095	0.05	1.98
6/16/77	800.	0.0	0.006	0.004	< 0.004	0.01	1.56
6/16/77	800.	3.0	0.087	0.017	0.070	0.06	2.57
7/13/77	910.	0.0	0.015	0.006	0.009	0.06	1.70
7/13/77	910.	3.0	0.005	0.004	< 0.004	0.02	2.41
8/16/77	1135.	0.0	0.243	0.025	0.218	0.12	1.53
8/16/77	1135.	3.0	0.477	0.064	0.393	1.13	2.91

ANALYTICAL DATA AT BPS-6 (CONTINUED)

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/27/76	1742.	0.0	0.003	0.022		102.8	2.77
4/27/76	1742.	3.5	< 0.002	0.023		103.0	2.79
5/13/76	1215.	0.0	0.109	0.204	66.6	100.5	3.36
5/13/76	1215.	3.5	0.558	0.595		95.5	3.65
5/26/76	1215.	0.0	0.064	0.082		141.5	6.58
5/26/76	1215.	3.0	0.067	0.101		145.7	6.31
6/17/76	930.	0.0	0.014	0.033		101.1	2.96
6/17/76	930.	3.0	0.006	0.022		111.9	3.13
7/15/76	1025.	0.0	0.098	0.110		98.7	4.04
7/15/76	1025.	3.8	0.069	0.079		121.6	4.51
8/18/76	1100.	0.0	0.146	0.163	56.5	86.3	3.17
8/18/76	1100.	3.0	0.148	0.162	58.6	86.1	3.19
9/15/76	215.	0.0	0.134	0.137	46.8	68.1	3.30
9/15/76	215.	3.0	0.124	0.145	55.0	79.4	3.93
9/29/76	100.	0.0	0.093	0.126	19.1	51.6	1.61
9/29/76	100.	4.0	0.081	0.119	30.2	78.9	2.35
10/15/76	1049.	0.0	0.003	0.022	79.7	121.4	3.55
10/15/76	1049.	5.0	0.003	0.022	80.7	120.4	3.61
1/ 6/77	837.	0.0	0.004	0.030	59.0	100.0	2.64
1/ 6/77	837.	4.0	0.003	0.026	67.6	103.4	3.67
3/ 9/77	1100.	0.0	0.005	0.048	56.1	100.6	2.97
3/ 9/77	1100.	2.5	< 0.002	0.049	55.1	98.2	3.06
6/16/77	900.	0.0	< 0.002	0.071	63.3	111.1	3.09
6/16/77	900.	3.0	0.025	0.096	61.1	110.7	2.16
7/13/77	910.	0.0	< 0.002	0.045	40.4	71.1	1.85
7/13/77	910.	3.0	< 0.002	0.092	61.9	105.9	2.09
8/16/77	1125.	0.0	0.022	0.065	60.9	116.6	2.94
8/16/77	1125.	3.0	0.219	0.350	62.0	125.1	4.68

ANALYTICAL DATA AT BPS-6 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/27/76	1742.	0.0	66.79		46.54	17.51
4/27/76	1742.	3.5	66.79		46.37	17.90
5/13/76	1215.	0.0	63.10	4.38	58.51	17.60
5/13/76	1215.	3.5	57.83		73.88	17.48
5/26/76	1215.	0.0	93.49		115.91	41.30
5/26/76	1215.	3.0	74.51		62.18	32.99
6/17/76	930.	0.0	73.19		57.91	24.76
6/17/76	930.	3.0	80.66		60.41	29.72
7/15/76	1025.	0.0	58.22		64.16	20.83
7/15/76	1025.	3.8	80.68		82.69	29.22
8/18/76	1100.	0.0	50.03	5.38	61.77	15.74
8/18/76	1100.	3.0	48.89	5.46	60.67	15.70
9/15/76	215.	0.0	50.81	6.53	77.98	15.25
9/15/76	215.	3.0	50.49	7.38	78.94	15.16
9/29/76	100.	0.0	33.11	3.22	28.23	9.84
9/29/76	100.	4.0	47.56	4.30	40.21	14.73
10/15/76	1049.	0.0	82.88	5.72	65.95	26.54
10/15/76	1049.	5.0	83.69	5.84	66.26	26.79
1/ 6/77	837.	0.0	69.35	5.75	57.36	20.88
1/ 6/77	837.	4.0	69.50	5.67	57.36	20.92
3/ 8/77	1100.	0.0	62.74	6.31	53.85	20.23
3/ 8/77	1100.	3.5	61.01	6.31	55.17	19.77
6/16/77	800.	0.0	75.73	5.20	56.31	22.97
6/16/77	800.	3.0	76.07	5.35	60.69	22.29
7/13/77	910.	0.0	45.57	3.13	23.73	14.61
7/13/77	910.	3.0	74.96	4.57	28.83	21.81
8/16/77	1135.	0.0	70.64	5.40	52.24	21.39
8/16/77	1135.	3.0	72.25	8.98	90.08	21.30

ANALYTICAL DATA AT BPS-6 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/27/76	1742.	0.0			
4/27/76	1742.	3.5			
5/13/76	1215.	0.0		47.5	
5/13/76	1215.	3.5			
5/26/76	1215.	0.0			
5/26/76	1215.	3.0			
6/17/76	930.	0.0			
6/17/76	930.	3.0			
7/15/76	1025.	0.0	1.9		
7/15/76	1025.	3.8	32.0		
8/18/76	1100.	0.0			
8/18/76	1100.	3.0			
9/15/76	215.	0.0	1.4	10.0	
9/15/76	215.	3.0	1.8	8.0	
9/29/76	100.	0.0	1.3	6.0	
9/29/76	100.	4.0	2.7	12.0	
10/15/76	1049.	0.0	3.8	8.0	
10/15/76	1049.	5.0	4.2	4.0	
1/ 6/77	837.	0.0	6.8		0.04
1/ 6/77	837.	4.0	6.4		0.08
3/ 9/77	1100.	0.0	6.2	15.0	0.10
3/ 9/77	1100.	3.8	6.5	16.0	0.09
6/16/77	600.	0.0	4.2	12.0	0.19
6/16/77	600.	3.0	4.0	10.0	0.20
7/13/77	910.	0.0			0.09
7/13/77	910.	3.0		32.0	0.23
8/16/77	1135.	0.0	1.5	4.0	0.04
8/16/77	1135.	3.0	1.7	8.0	0.42

ANALYTICAL DATA AT BPS-7

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/27/76	1822.	0.0	< 0.004	< 0.004	< 0.004	0.01	1.94
4/27/76	1822.	2.5	0.025	< 0.004	0.021	0.03	1.27
5/12/76	1630.	0.0	0.105	0.006	0.099	0.02	1.62
5/12/76	1630.	2.0	0.095	0.006	0.089	0.09	1.53
5/25/76	1337.	0.0	0.144	0.015	0.129		1.84
5/25/76	1337.	2.5	0.181	0.020	0.161	0.25	1.94
6/17/76	1005.	0.0	0.127	0.006	0.121	0.10	1.57
6/17/76	1005.	6.0	0.075	0.007	0.068	0.13	1.49
7/15/76	852.	0.0	0.291	0.026	0.265	0.11	1.75
7/15/76	852.	3.0	0.617	0.046	0.571	0.18	1.93
8/18/76	1217.	0.0	0.179	0.032	0.147	0.13	1.69
8/18/76	1217.	6.0	0.183	0.035	0.148	0.13	1.67
9/15/76	930.	0.0	0.022	0.017	0.005	0.16	1.51
9/15/76	930.	6.0	0.018	0.016	< 0.004	0.16	1.61
9/29/76	905.	0.0	0.020	0.010	0.010	0.10	1.27
9/29/76	905.	3.0	0.019	0.010	0.009	0.11	1.28
10/14/76	900.	0.0	0.092	0.007	0.085	< 0.01	2.38
10/14/76	900.	3.0	0.047	0.006	0.041	0.02	2.80
1/ 5/77	1455.	0.0	0.279	0.013	0.266	0.09	1.30
1/ 5/77	1455.	3.5	0.270	0.013	0.257	0.11	1.38
3/ 9/77	905.	0.0	0.156	0.005	0.151	0.09	1.26
3/ 9/77	905.	4.5	0.115	0.005	0.110	0.08	1.17
6/16/77	830.	0.0	0.071	0.012	0.059	0.05	1.85
6/16/77	830.	2.8	0.097	0.014	0.083	0.07	2.39
7/13/77	1127.	0.0	0.031	0.009	0.022	0.07	1.72
7/13/77	1127.	4.0	0.032	0.009	0.023	0.11	4.48
8/16/77	1010.	0.0	0.039	0.007	0.032	< 0.01	1.63
8/16/77	1010.	2.5	0.033	0.007	0.026	0.01	1.46

ANALYTICAL DATA AT BPS-7 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS		O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/27/76	1822.	0.0	<	0.002	0.014		115.9	2.87
4/27/76	1822.	2.5		0.004	0.018		108.7	2.90
5/12/76	1630.	0.0		0.005	0.019		104.6	2.70
5/12/76	1630.	3.0		0.002	0.022		112.6	2.72
5/25/76	1337.	0.0			0.105			
5/25/76	1337.	2.5		0.107	0.154		106.0	3.54
6/17/76	1005.	0.0		0.044	0.061		44.6	1.19
6/17/76	1005.	6.0		0.064	0.076		26.2	1.18
7/15/76	852.	0.0		0.043	0.064		76.9	2.57
7/15/76	852.	3.0		0.057	0.070		110.2	4.11
8/18/76	1217.	0.0		0.162	0.187	28.8	44.4	1.29
8/18/76	1217.	6.0		0.163	0.186	50.4	48.8	1.39
9/15/76	930.	0.0		0.110	0.152	9.1	32.9	1.21
9/15/76	930.	6.0		0.102	0.140	12.3	39.0	1.34
9/29/76	905.	0.0		0.094	0.130	8.9	21.9	0.64
9/29/76	905.	3.0		0.098	0.134	8.7	21.5	0.67
10/14/76	900.	0.0		0.003	0.021	77.2	119.2	3.55
10/14/76	900.	3.0		0.006	0.021	75.9	119.6	3.26
1/ 5/77	1455.	0.0		0.014	0.033	71.1	115.6	4.38
1/ 5/77	1455.	3.5		0.014	0.036	70.3	120.2	4.24
3/ 9/77	905.	0.0		0.032	0.035	60.1	100.2	3.18
3/ 9/77	905.	4.5		0.013	0.040	67.3	98.4	3.10
6/16/77	830.	0.0		0.036	0.049	45.0	97.1	3.13
6/16/77	830.	2.5		0.009	0.056	43.8	97.2	3.06
7/13/77	1127.	0.0	<	0.002	0.053	39.9	66.3	1.66
7/13/77	1127.	4.0	<	0.002	0.055	40.7	66.1	1.56
8/16/77	1010.	0.0		0.012	0.045	55.1	110.4	2.27
8/16/77	1010.	2.5	<	0.002	0.057	53.6	110.4	2.27

ANALYTICAL DATA AT BPS-7

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/27/76	1822.	0.0	77.14		46.37	20.06
4/27/76	1822.	2.5	73.46		47.90	18.62
5/12/76	1630.	0.0	65.37		54.26	21.29
5/12/76	1630.	3.0	67.44		49.36	21.41
5/25/76	1237.	0.0	66.19		55.23	21.59
5/25/76	1237.	2.5				21.50
6/17/76	1005.	0.0	21.57		34.11	13.10
6/17/76	1005.	6.0	19.12		28.03	10.29
7/15/76	852.	0.0	42.46		54.14	14.20
7/15/76	852.	3.0	64.49		82.23	19.49
8/18/76	1217.	0.0	22.96	2.45	27.41	7.40
8/18/76	1217.	6.0	25.88	2.53	27.57	8.07
9/15/76	930.	0.0	19.44	2.63	21.30	5.62
9/15/76	930.	6.0	25.72	2.70	20.82	7.06
9/29/76	905.	0.0	12.31	1.39	13.03	4.06
9/29/76	905.	3.0	12.31	1.38	13.34	4.10
10/14/76	900.	0.0	94.34	5.98	60.55	25.32
10/14/76	900.	3.0	85.32	6.19	60.39	25.24
1/ 5/77	1455.	0.0	75.76	6.95	74.47	21.29
1/ 5/77	1455.	3.5	74.56	6.87	71.76	21.21
3/ 9/77	905.	0.0	62.74	6.43	57.67	20.10
3/ 9/77	905.	4.5	63.21	6.54	56.20	20.48
6/16/77	830.	0.0	65.53	4.46	53.81	19.24
6/16/77	830.	2.8	62.99	4.61	52.87	19.75
7/13/77	1127.	0.0	43.52	2.91	25.96	12.29
7/13/77	1127.	4.0	43.64	2.93	26.60	12.57
8/16/77	1010.	0.0	70.32	4.56	36.49	20.97
8/16/77	1010.	2.5	71.60	4.64	37.14	21.01

ANALYTICAL DATA AT BPS-7 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/27/76	1822.	0.0			
4/27/76	1822.	2.5			
5/12/76	1630.	0.0			
5/12/76	1630.	3.0			
5/25/76	1337.	0.0			
5/25/76	1337.	2.5			
6/17/76	1005.	0.0			
6/17/76	1005.	6.0			
7/15/76	852.	0.0	1.3		
7/15/76	852.	3.0	2.2		
8/18/76	1217.	0.0			
8/18/76	1217.	6.0			
9/15/76	930.	0.0	1.0	7.0	
9/15/76	930.	6.0	1.3	7.0	
9/29/76	905.	0.0	1.4	8.0	
9/29/76	905.	3.0	1.5		
10/14/76	900.	0.0	2.1	7.0	
10/14/76	900.	3.0	2.2	3.0	
1/ 5/77	1455.	0.0	2.8		0.05
1/ 5/77	1455.	3.5	1.5		0.10
3/ 9/77	905.	0.0	6.2	2.0	0.03
3/ 9/77	905.	4.0	2.9	2.0	0.02
6/14/77	630.	0.0	1.6	15.0	0.16
6/14/77	630.	2.5	2.2	4.0	0.17
7/13/77	1127.	0.0			0.05
7/13/77	1127.	4.0		14.0	0.09
8/16/77	1010.	0.0	2.7	9.0	0.08
8/16/77	1010.	2.5	5.9	16.0	0.09

ANALYTICAL DATA AT BPS-8

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/28/76	1115.	0.0	0.028	< 0.004	0.024	0.09	1.77
4/28/76	1115.	2.0	0.027	< 0.004	0.023	0.11	1.87
5/12/76	1545.	0.0	0.076	0.004	0.072	0.06	1.69
5/12/76	1545.	2.0	0.040	0.005	0.035	0.12	1.72
5/25/76	1420.	0.0	0.592	0.023	0.569	0.11	1.80
5/25/76	1420.	2.5	0.642	0.026	0.616	0.15	1.94
6/16/76	1300.	0.0	0.044	0.007	0.037	0.13	1.52
6/16/76	1300.	3.0	0.045	0.007	0.038	0.15	1.49
7/14/76	1513.	0.0	0.115	0.013	0.102	0.10	1.51
7/14/76	1513.	2.5	0.099	0.014	0.085	0.16	1.47
8/18/76	1450.	0.0	0.149	0.027	0.122	0.20	1.67
8/18/76	1450.	2.5	0.132	0.027	0.105	0.21	1.76
9/15/76	1115.	0.0	0.017	0.017	< 0.004	0.17	1.72
9/15/76	1115.	3.0					1.52
9/29/76	1050.	0.0	0.031	0.010	0.021	0.04	1.33
9/29/76	1050.	3.0	0.140	0.009	0.131	0.06	1.24
10/14/76	1019.	0.0	0.209	0.006	0.203	0.03	2.01
10/14/76	1019.	2.0	0.705	0.007	0.698	0.06	2.35
1/ 5/77	1356.	0.0	0.180	0.010	0.170	0.16	1.42
1/ 5/77	1356.	3.0	0.180	0.011	0.169	0.16	1.29
3/ 9/77	1025.	0.0	0.147	0.005	0.142	0.16	2.07
3/ 9/77	1025.	2.5	0.144	0.005	0.139	0.10	2.37

ANALYTICAL DATA AT BPS-8 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/28/76	1115.	0.0	0.015	0.036		111.1	2.67
4/28/76	1115.	2.0	0.020	0.035		107.7	2.67
5/12/76	1545.	0.0	0.005	0.022		113.4	2.69
5/12/76	1545.	2.0	0.006	0.023		112.4	2.70
5/25/76	1420.	0.0	0.013	0.042		110.4	3.20
5/25/76	1420.	2.5	0.018	0.125		112.2	3.25
6/16/76	1300.	0.0	0.048	0.070		26.4	0.88
6/16/76	1300.	3.0	0.050	0.074		26.8	0.86
7/14/76	1513.	0.0	0.066	0.095		34.0	1.18
7/14/76	1513.	2.5	0.075	0.097		34.7	1.20
8/18/76	1450.	0.0	0.143	0.180	58.7	31.9	1.18
8/18/76	1450.	2.5	0.147	0.171	47.7	32.5	1.18
9/15/76	1115.	0.0	0.144	0.181	< 5.0	29.3	0.57
9/15/76	1115.	3.0		0.182			
9/29/76	1050.	0.0	0.057	0.101	9.7	20.5	0.51
9/29/76	1050.	3.0	0.064	0.102	8.7	20.7	0.55
10/14/76	1019.	0.0	0.035		70.6	116.4	3.52
10/14/76	1019.	3.0	0.025	0.084	69.9	114.4	3.50
1/ 5/77	1356.	0.0	0.012	0.028	62.7	90.8	3.32
1/ 5/77	1356.	3.0	0.010	0.029	61.8	92.3	3.30
3/ 9/77	1025.	0.0	0.071	0.071	65.6	105.2	3.43
3/ 9/77	1025.	2.5	0.067	0.067	54.3	104.4	3.46

ANALYTICAL DATA AT BPS-8 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/29/76	1115.	0.0	71.76		41.26	18.24
4/29/76	1115.	2.0	73.18		41.43	
5/12/76	1545.	0.0	78.29		47.07	22.59
5/12/76	1545.	2.0	79.06		47.73	22.79
5/25/76	1420.	0.0	71.59		60.36	22.19
5/25/76	1420.	2.5	70.86		62.84	23.21
6/16/76	1300.	0.0	20.73		27.85	10.59
6/16/76	1300.	3.0	20.44		26.06	9.94
7/14/76	1513.	0.0	21.46		27.57	8.27
7/14/76	1513.	2.5	21.17		26.06	8.63
8/18/76	1450.	0.0	16.15	3.06	25.99	7.02
8/18/76	1450.	2.5	21.17	3.17		7.44
9/15/76	1115.	0.0	12.36	1.84	13.90	3.26
9/15/76	1115.	3.0	11.24	1.59	10.36	3.05
9/29/76	1050.	0.0	11.67	1.32	13.34	4.14
9/29/76	1050.	3.0	11.04	1.16	11.19	4.23
10/14/76	1019.	0.0	79.79	5.94	59.75	23.98
10/14/76	1019.	3.0	79.63	5.79	59.44	24.57
1/ 5/77	1356.	0.0	64.73	5.61	52.56	19.62
1/ 5/77	1356.	3.0	63.98	5.53	52.56	16.89
3/ 9/77	1025.	0.0	65.85	7.03	59.28	20.15
3/ 9/77	1025.	2.5	65.57	6.84	59.43	20.27

ANALYTICAL BPS-8 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/28/76	1115.	0.0			
4/28/76	1115.	2.0			
5/12/76	1545.	0.0			
5/12/76	1545.	2.0			
5/25/76	1420.	0.0			
5/25/76	1420.	2.5			
6/16/76	1300.	0.0			
6/16/76	1300.	3.0			
7/14/76	1513.	0.0	1.8		
7/14/76	1513.	2.5	4.1		
8/18/76	1450.	0.0			
8/18/76	1450.	2.5			
9/15/76	1115.	0.0	1.2	8.0	
9/15/76	1115.	2.0	1.4	6.0	
9/29/76	1050.	0.0	1.3	10.0	
9/29/76	1050.	3.0	1.2	1.0	
10/14/76	1019.	0.0	1.1	4.0	
10/14/76	1019.	3.0	1.4	3.0	
1/ 5/77	1356.	0.0	2.2		0.03
1/ 5/77	1356.	3.0	2.9		0.06
3/ 9/77	1025.	0.0	1.0	3.0	0.04
3/ 9/77	1025.	2.5	0.[illegible]	1.0	

ANALYTICAL DATA AT BPS-9

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/28/76	1343.	0.0	0.608	< 0.004	0.604	0.03	1.79
4/28/76	1343.	3.0	0.080	< 0.004	0.076	0.02	1.78
5/12/76	1515.	0.0	0.038	0.006	0.032	0.13	1.92
5/12/76	1515.	2.5	0.019	0.007	0.012	0.24	1.93
5/25/76	1507.	0.0	0.061	0.006	0.055	0.11	1.76
5/25/76	1507.	3.5	0.067	0.006	0.061	0.06	1.75
6/16/76	1335.	0.0	0.063	0.006	0.057	0.06	1.54
6/16/76	1335.	3.5	0.062	0.007	0.055	0.07	1.54
7/14/76	1436.	0.0	0.022	0.005	0.017	< 0.06	1.61
7/14/76	1436.	4.5	0.040	0.006	0.034	0.13	1.51
8/18/76	1400.	0.0	0.055	0.011	0.044	0.08	1.47
8/18/76	1400.	3.0	0.051	0.012	0.039	0.09	1.36
9/15/76	1145.	0.0	0.036	0.017	0.019	0.13	1.55
9/15/76	1145.	4.0	0.031	0.017	0.014	0.12	1.54
9/29/76	1140.	0.0	0.026	0.009	0.017	0.03	1.82
9/29/76	1140.	3.5	0.012	0.009	< 0.004	< 0.01	1.05
10/14/76	1135.	0.0	0.084	< 0.004	0.080	0.12	2.29
10/14/76	1135.	4.0	0.092	< 0.004	0.088	0.09	3.12
1/ 5/77	1217.	0.0	0.175	0.015	0.160	0.12	2.40
1/ 5/77	1217.	4.0	0.183	0.010	0.173	0.15	2.48
3/ 9/77	1100.	0.0	0.062	0.006	0.056	0.08	1.95
3/ 9/77	1100.	4.5	0.042	0.006	0.036	0.10	1.40

ANALYTICAL DATA AT BPS-9 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/28/76	1343.	0.0	0.002	0.029		107.3	2.61
4/28/76	1343.	3.0	0.004	0.035		107.9	2.35
5/12/76	1515.	0.0	< 0.002	0.031		111.8	2.54
5/12/76	1515.	2.5	< 0.002	0.033		111.8	2.54
5/25/76	1507.	0.0	< 0.002	0.046		113.2	2.66
5/25/76	1507.	3.5	< 0.002	0.042		114.0	2.68
6/16/76	1335.	0.0	0.060	0.090		26.6	0.79
6/16/76	1335.	3.5	0.066	0.094		24.8	0.77
7/14/76	1436.	0.0	0.033	0.076		45.0	1.07
7/14/76	1436.	4.5	0.046	0.077		40.0	1.09
8/18/76	1400.	0.0	0.092	0.107	47.0	28.3	0.78
8/18/76	1400.	3.0	0.090	0.110	47.7	30.5	1.02*
9/15/76	1145.	0.0	0.124	0.165	5.9	25.0	0.54
9/15/76	1145.	4.0	0.128	0.165	< 5.0	21.4	0.52
9/29/76	1140.	0.0	0.071	0.118	8.9	20.9	0.60
9/29/76	1140.	3.5	0.063	0.110	7.4	20.7	0.60
10/14/76	1135.	0.0	0.048	0.066	39.6	75.7	2.53
10/14/76	1135.	4.0	0.029	0.047	59.6	100.8	3.27
1/ 5/77	1217.	0.0	0.010	0.029	60.5	91.5	3.24
1/ 5/77	1217.	4.0	0.018	0.030	64.9	99.4	3.13
3/ 9/77	1100.	0.0	0.048	0.066	47.9	93.7	3.00
3/ 9/77	1100.	4.5	0.067	0.069	48.1	95.2	3.02

ANALYTICAL DATA AT BPS-9 (CONTINUED)

MO/DA/YR	...				CA MG/L	MG MG/L
4/28/76	1343.	0.0	71.76		40.41	
4/28/76	1343.	2.0	70.49		41.43	18.87
5/12/76	1515.	0.0	79.22		41.68	21.88
5/12/76	1515.	2.5	79.64		42.00	22.04
5/25/76	1507.	0.0	73.64		45.13	23.02
5/25/76	1507.	3.5	73.05		44.14	22.84
6/16/76	1335.	0.0	19.85		25.88	9.86
6/16/76	1335.	3.5	17.65		24.27	9.60
7/14/76	1436.	0.0	22.32		23.78	8.18
7/14/76	1436.	4.5	23.79		23.78	8.05
8/18/76	1400.	0.0	14.04	1.60	23.32	5.68
8/18/76	1400.	3.0	14.20	1.71	12.75	5.05
9/15/76	1145.	0.0	10.75	1.83	17.44	4.35
9/15/76	1145.	4.0	11.88	1.87	18.89	4.27
9/29/76	1140.	0.0	12.31	1.47	13.95	4.27
9/29/76	1140.	3.5	11.67	1.45	9.50	4.10
10/14/76	1135.	0.0	51.35	4.03	42.13	15.71
10/14/76	1135.	4.0	66.95	5.13	51.82	21.33
1/ 5/77	1217.	0.0	63.09	5.73	50.96	18.81
1/ 5/77	1217.	4.0	64.73	5.80	52.56	19.21
3/ 9/77	1100.	0.0	58.97	7.66	56.06	18.29
3/ 9/77	1100.	4.5	58.66	7.56	55.62	18.20

ANALYTICAL DATA AT BPS-9 (CONTINUED)

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/28/76	1343.	0.0			
4/28/76	1343.	3.0			
5/12/76	1515.	0.0			
5/12/76	1515.	2.5			
5/25/76	1507.	0.0			
5/25/76	1507.	3.5			
6/16/76	1335.	0.0			
6/16/76	1335.	3.5			
7/14/76	1436.	0.0	2.4		
7/14/76	1436.	4.5	3.6		
8/18/76	1400.	0.0			
8/18/76	1400.	3.0			
9/15/76	1145.	0.0	1.6	6.0	
9/15/76	1145.	4.0	1.7	11.0	
9/29/76	1140.	0.0	1.7	3.0	
9/29/76	1140.	3.5	2.4	6.0	
10/14/76	1135.	0.0	1.2	16.0	
10/14/76	1135.	4.0	5.0	21.0	
1/ 5/77	1217.	0.0	1.4		0.05
1/ 5/77	1217.	4.0	4.[illegible]		0.26
3/ [illegible]/77	1100.	0.0	1.0	5.0	0.10
3/ [illegible]/77	1100.	4.5	1.7	2.0	0.15

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/28/76	1512.	0.0	< 0.004	< 0.004	< 0.004	< 0.01	1.90
5/12/76	1500.	0.0	0.018	< 0.004	0.014	0.02	1.82
5/25/76	1452.	0.0	0.399	0.006	0.393	0.18	1.79
6/16/76	1355.	0.0	0.061	0.007	0.054	0.03	1.54
7/14/76	1414.	0.0	0.048	0.006	0.042	0.05	1.45
8/18/76	1350.	0.0	0.054	0.010	0.044	0.05	1.26
9/15/76	1200.	0.0	0.022	0.017	0.005	0.05	1.61
9/29/76	1130.	0.0	0.017	0.008	0.009	0.03	1.22
10/14/76	1202.	0.0	0.107	0.012	0.095	0.10	3.06
1/ 5/77	1152.	0.0	0.190	0.011	0.179	0.11	1.58
3/ 9/77	1120.	0.0	0.067	0.005	0.062	0.05	1.66

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/28/76	1512.	0.0	71.20		40.07	19.08
5/12/76	1500.	0.0	81.08		41.02	22.00
5/25/76	1452.	0.0	74.51		46.62	23.67
6/16/76	1355.	0.0	20.00		25.17	10.16
7/14/76	1414.	0.0	23.50		24.99	8.54
8/18/76	1350.	0.0	13.39	1.28	11.81	4.54
9/15/76	1200.	0.0	9.95	1.40	10.19	3.31
9/29/76	1130.	0.0	11.83	1.19	9.50	3.80
10/14/76	1202.	0.0	55.57	5.53	44.99	17.72
1/ 5/77	1152.	0.0	66.81	5.67	49.36	18.81
3/ 9/77	1120.	0.0	56.14	7.61	46.22	17.87

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/28/76	1512.	0.0	0.004	0.027		107.7	2.61
5/12/76	1500.	0.0	< 0.002	0.028		113.6	2.51
5/25/76	1452.	0.0	< 0.002	0.064		113.0	2.54
6/16/76	1355.	0.0	0.056	0.037		28.6	0.89
7/14/76	1414.	0.0	0.040	0.076		41.2	1.06
8/18/76	1350.	0.0	0.071	0.098	46.3	26.9	0.94
9/15/76	1200.	0.0	0.113	0.156	5.9	22.4	0.37
9/29/76	1130.	0.0	0.059	0.104	7.2	20.5	0.54
10/14/76	1202.	0.0	0.047	0.060	46.3	89.1	2.85
1/ 5/77	1152.	0.0	0.014	0.030	59.3	91.5	3.74
3/ 9/77	1120.	0.0	0.041	0.089	46.4	93.7	2.95

ANALYTICAL DATA AT BPS-10

ANALYTICAL DATA AT BPS-10 (CONTINUED)

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/28/76	1512.	0.0			
5/12/76	1500.	0.0			
5/25/76	1452.	0.0			
6/16/76	1355.	0.0			
7/14/76	1414.	0.0	1.2		
8/18/76	1350.	0.0			
9/15/76	1200.	0.0	1.6	5.0	
9/29/76	1130.	0.0	1.6	2.0	
10/14/76	1202.	0.0	1.6	2.0	
1/ 5/77	1152.	0.0	1.3		0.04
3/ 9/77	1120.	0.0	2.4	5.0	

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/28/76	1222.	0.0	0.198	< 0.004	0.194	0.06	1.96
5/12/76	1600.	0.0	0.032	0.005	0.027	0.03	1.66
5/25/76	1415.	0.0	0.312	0.016	0.296	0.01	1.73
6/16/76	1250.	0.0	0.010	< 0.004	0.006	0.17	1.43
7/14/76	1542.	0.0	0.007	< 0.004	< 0.004	< 0.01	2.20
8/18/76	1255.	0.0	0.011	0.007	< 0.004	0.04	1.63
9/15/76	1010.	0.0	0.014	0.017		0.08	1.37
9/29/76	1115.	0.0	0.007	0.006	< 0.004	< 0.01	1.23
10/14/76	1057.	0.0	0.035	0.008	0.027	0.04	2.39
1/ 5/77	1328.	0.0	0.068	0.007	0.061	0.03	1.46
3/ 9/77	1010.	0.0	0.103	0.005	0.098	0.16	1.46

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/28/76	1222.	0.0	0.007	0.033		107.3	2.72
5/12/76	1600.	0.0	< 0.002	0.022		111.4	2.67
5/25/76	1415.	0.0	< 0.002	0.171		114.0	2.92
6/16/76	1250.	0.0	0.003	0.029		36.0	1.19
7/14/76	1542.	0.0	< 0.002	0.033		63.8	2.58
8/18/76	1255.	0.0	0.003	0.023	44.5	15.5	1.41
9/15/76	1010.	0.0	0.127	0.195	< 5.0	22.9	0.33
9/29/76	1115.	0.0	0.030	0.090	8.9	23.5	1.05
10/14/76	1057.	0.0	0.044	0.062	20.7	53.2	1.77
1/ 5/77	1328.	0.0	0.010	0.030	58.1	91.9	3.42
3/ 9/77	1010.	0.0	0.025	0.043	49.9	102.8	3.40

ANALYTICAL DATA AT BPS-11

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/28/76	1222.	0.0	69.44		41.43	
5/12/76	1600.	0.0	79.22		45.76	22.43
5/25/76	1415.	0.0	70.28		52.91	22.79
6/16/76	1250.	0.0	26.30		78.84	12.36
7/14/76	1542.	0.0	38.38		35.62	11.31
8/18/76	1255.	0.0	8.04	2.21	21.27	3.03
9/15/76	1010.	0.0	10.27	1.76	12.93	5.40
9/29/76	1115.	0.0	11.83	1.60	22.24	4.61
10/14/76	1057.	0.0	31.68	2.06	29.91	9.71
1/ 5/77	1328.	0.0	66.96	5.77	47.76	19.21
3/ 9/77	1010.	0.0	65.57	6.74	59.43	19.89

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/28/76	1222.	0.0			
5/12/76	1600.	0.0			
5/25/76	1415.	0.0			
6/16/76	1250.	0.0			
7/14/76	1542.	0.0	1.3		
8/18/76	1255.	0.0			
9/15/76	1010.	0.0	1.6	5.0	
9/29/76	1115.	0.0	2.7	5.0	
10/14/76	1057.	0.0	1.0		
1/ 5/77	1328.	0.0	1.6		0.08
3/ 9/77	1010.	0.0	[illegible]		[illegible]

ANALYTICAL DATA AT BPS-11 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/28/76	1010.	0.0	0.004	< 0.004	< 0.004	< 0.01	1.71
5/12/76	1320.	0.0	0.017	< 0.004	0.013	0.02	1.57
5/25/76	1320.	0.0	0.046	0.008	0.076	0.11	1.81
6/17/76	1035.	0.0	0.005	< 0.004	< 0.004	0.02	1.85
7/15/76	923.	0.0	0.007	< 0.004	< 0.004	0.03	2.19
8/18/76	1200.	0.0	0.011	< 0.004	0.007	0.03	1.94
9/15/76	915.	0.0	0.033	0.009	0.021	0.07	1.70
9/29/76	930.	0.0	0.022	< 0.004	0.018	< 0.01	1.52
10/14/76	937.	0.0	< 0.004	0.005	< 0.004	0.02	1.00
1/ 6/77	922.	0.0	0.013	0.005	0.009	0.06	1.09
3/ 9/77	930.	0.0	0.106	0.005	0.101	0.31	2.26

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/28/76	1010.	0.0	0.004	0.014		117.7	2.90
5/12/76	1320.	0.0	< 0.002	0.013		102.2	2.52
5/25/76	1320.	0.0	< 0.002	0.023		107.8	2.77
6/17/76	1035.	0.0	0.003	0.007		104.7	2.28
7/15/76	923.	0.0	< 0.002	0.012		123.4	2.91
8/18/76	1200.	0.0	< 0.002	0.010	100.0	120.4	2.56
9/15/76	915.	0.0	0.007	0.012	74.0	117.6	2.16
9/29/76	930.	0.0	< 0.002	0.032	70.3	118.5	2.42
10/14/76	937.	0.0	0.002	0.015	77.2	120.6	3.23
1/ 6/77	922.	0.0	0.009	0.016	48.3	83.7	3.02
3/ 9/77	930.	0.0	0.093	0.093	47.1	93.7	2.93

ANALYTICAL DATA AT BPS-13

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/28/76	1010.	0.0	77.56		45.35	20.36
5/12/76	1320.	0.0	71.31		44.46	20.90
5/25/76	1320.	0.0	70.13		47.12	22.84
6/17/76	1035.	0.0	73.19		40.02	24.64
7/15/76	923.	0.0	83.31		41.96	26.06
8/18/76	1200.	0.0	85.61	6.01	37.19	27.49
9/15/76	915.	0.0	90.74	5.20	35.31	21.05
9/29/76	930.	0.0	77.72	5.52	38.37	24.85
10/14/76	937.	0.0	76.38	5.58	46.74	25.28
1/ 6/77	932.	0.0	60.55	5.22	46.33	17.26
3/ 9/77	930.	0.0	58.03	6.23	53.56	15.71

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/28/76	1010.	0.0			
5/12/76	1320.	0.0			
5/25/76	1320.	0.0			
6/17/76	1035.	0.0			
7/15/76	923.	0.0	1.4		
8/18/76	1200.	0.0			
9/15/76	915.	0.0	1.5	2.2	
9/29/76	930.	0.0	1.4	7.0	
10/14/76	937.	0.0	1.3	4.2	
1/ 6/77	932.	0.0	1.[illegible]		0.22
3/ 9/77	930.	0.0	1[illegible].0	41.0	0.40

ANALYTICAL DATA AT BPS-3 (CONTINUED)

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DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/27/76	1707.	0.0	0.018	< 0.004	0.014	0.02	1.39
4/27/76	1707.	1.5	0.026	< 0.004	0.022	0.03	1.50
5/12/76	812.	0.0	0.067	0.004	0.063	0.04	1.51
5/25/76	1100.	0.0	0.014	< 0.004	0.010	< 0.01	1.34
6/17/76	915.	0.0	0.016	< 0.004	0.012	0.07	2.52
7/15/76	1002.	0.0	0.004	< 0.004	< 0.004	< 0.01	1.45
8/15/76	1045.	0.0	0.011	< 0.004	0.007	< 0.01	1.55
9/15/76	220.	0.0	0.005	0.009		< 0.01	1.69
9/29/76	120.	0.0	0.074	0.007	0.067	0.01	1.60
10/15/76	848.	0.0	0.006	< 0.004	< 0.004	0.04	1.97
1/ 6/77	951.	0.0	0.056	< 0.004	0.052	0.01	2.23
3/10/77	845.	0.0	0.319	< 0.004	0.315	< 0.01	2.12

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	P-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/27/76	1707.	0.0	0.008	0.024		101.4	2.85
4/27/76	1707.	1.5	0.006	0.022		100.0	2.84
5/12/76	812.	0.0	< 0.002	0.019		101.0	2.53
5/25/76	1100.	0.0	< 0.002	0.033		100.0	2.40
6/17/76	915.	0.0	< 0.002	0.001		135.0	3.38
7/15/76	1002.	0.0	< 0.002	0.016		102.3	2.70
8/15/76	1045.	0.0	< 0.002	0.007	96.2	111.9	2.29
9/15/76	220.	0.0	< 0.002	0.020	73.5	116.0	3.01
9/29/76	120.	0.0	0.004	0.014	72.6	117.7	4.24
10/15/76	848.	0.0	0.004	0.016	61.8	121.4	3.41
1/ 6/77	951.	0.0			61.5	88.8	2.78
3/10/77	845.	0.0	0.011	0.132	51.6	97.3	2.71

ANALYTICAL DATA AT BPS-14

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/27/76	1707.	0.0	69.79		47.73	17.34
4/27/76	1707.	1.5	68.23		46.58	17.47
5/12/76	912.	0.0	71.47		45.44	20.67
5/25/76	1100.	0.0	57.00		34.37	13.13
6/17/76	915.	0.0	95.46		52.54	38.81
7/15/76	1002.	0.0	63.19		40.48	19.35
8/18/76	1045.	0.0	74.34	5.10	38.76	23.34
9/15/76	230.	0.0	80.09	5.21	49.00	21.96
9/29/76	120.	0.0	82.17	5.50	63.25	26.68
10/19/76	848.	0.0	78.17	5.69	51.34	26.58
1/ 6/77	951.	0.0	63.83	5.33	44.89	18.20
3/10/77	845.	0.0	59.60	6.11	49.16	23.31

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/27/76	1707.	0.0			
4/27/76	1707.	1.5			
5/12/76	912.	0.0			
5/25/76	1100.	0.0			
6/17/76	915.	0.0			
7/15/76	1002.	0.0	1.3		
8/18/76	1045.	0.0			
9/15/76	230.	0.0	2.8	9.0	
9/29/76	120.	0.0	3.7	6.0	
10/19/76	848.	0.0	2.[illegible]	2.0	
1/ 6/77	951.	0.0	27.0		0.38
3/10/77	845.	0.0	21.0	74.0	0.99

ANALYTICAL DATA AT BPS-14 (CONTINUED)

ANALYTICAL DATA AT BPS-15

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
5/12/76	850.	0.0	0.318	< 0.004	0.314	0.03	1.40
5/12/76	850.	3.0	0.298	< 0.004	0.294	0.02	1.40
5/25/76	830.	0.0	0.307	< 0.004	0.303	< 0.01	1.51
5/25/76	830.	3.0	0.292	< 0.004	0.288	< 0.01	1.51
6/16/76	855.	0.0	0.330	< 0.004	0.326	0.02	1.43
6/16/76	855.	3.0	0.324	< 0.004	0.320	< 0.01	1.37
7/14/76	925.	0.0	0.018	< 0.004	0.014	< 0.06	1.32
7/14/76	925.	3.0	0.024	< 0.004	0.020	< 0.06	1.24
8/18/76	920.	0.0	0.081	0.007	0.074	0.03	1.22
8/18/76	920.	3.5	0.083	< 0.004	0.079	0.04	1.23
9/16/76	845.	0.0	0.089	0.010	0.079	< 0.01	1.22
9/16/76	845.	3.5	0.088	0.010	0.078	< 0.01	1.20
9/30/76	900.	0.0	0.044	< 0.004	0.040	< 0.01	1.16
9/30/76	900.	3.5	0.053	< 0.004	0.049	< 0.01	1.14
10/15/76	935.	0.0	0.142	< 0.004	0.138	0.03	1.30
10/15/76	935.	3.5	0.134	< 0.004	0.120	0.03	1.63
1/ 5/77	916.	0.0	0.348	< 0.004	0.344	< 0.01	1.20
1/ 5/77	916.	3.0	0.352	< 0.004	0.348	0.01	1.46
3/10/77	922.	0.0	0.465	< 0.004	0.461	0.01	2.06
3/10/77	922.	3.5	0.477	< 0.004	0.473	0.41	2.04

ANALYTICAL DATA AT BPS-15 (CONTINUED)

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
5/12/76	850.	0.0	0.035	0.060		102.2	2.88
5/12/76	850.	3.0	0.023	0.069		99.7	2.91
5/25/76	830.	0.0	0.035	0.120		100.0	2.67
5/25/76	820.	3.0	0.039	0.117		100.8	2.89
6/16/76	855.	0.0	0.036	0.049		94.7	2.40
6/16/76	855.	3.0	0.026	0.055		93.7	2.88
7/14/76	925.	0.0	0.011	0.029		97.7	3.01
7/14/76	925.	3.0	< 0.002	0.029		97.5	3.05
8/15/76	920.	0.0	< 0.002	0.020	84.5	95.5	3.14
8/15/76	920.	3.5	0.003	0.024	85.4	95.7	3.16
9/16/76	845.	0.0	0.030	0.051	59.2	95.4	2.80
9/16/76	845.	3.5	0.031	0.058	59.2	95.4	2.79
9/30/76	900.	0.0	0.003	0.045	50.1	95.0	2.78
9/30/76	900.	3.5	0.011	0.048	49.9	95.8	2.78
10/15/76	938.	0.0	0.035	0.056	59.0	92.4	2.88
10/15/76	938.	3.5	0.041	0.055	59.5	97.4	2.92
1/ 5/77	916.	0.0	0.038	0.084	63.7	90.8	2.67
1/ 5/77	916.	3.0	0.036	0.090	64.2	95.0	2.67
3/10/77	922.	0.0	0.044	0.142	51.3	91.9	2.61
3/10/77	922.	3.5	0.045	0.144	50.1	92.3	2.60

ANALYTICAL DATA AT BPS-15 (CONTINUED)

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
5/12/76	850.	0.0	70.23		51.49	20.71
5/12/76	850.	3.0	69.30		50.67	20.63
5/25/76	830.	0.0	63.57		49.60	21.22
5/25/76	630.	3.0	62.25		47.94	20.94
6/16/76	855.	0.0	66.74		50.21	22.67
6/16/76	855.	3.0	66.86		50.21	22.12
7/14/76	925.	0.0	59.38		48.07	18.55
7/14/76	925.	3.0	60.26		49.59	19.35
8/18/76	920.	0.0	63.81	4.78	46.64	19.65
8/18/76	920.	3.5	63.81	4.95	47.90	19.98
9/16/76	845.	0.0	65.45	4.37	51.73	17.60
9/16/76	845.	3.5	64.65	4.15	45.78	18.65
9/30/76	900.	0.0	63.27	4.44	50.96	19.15
9/30/76	900.	3.5	63.91	4.33	48.50	18.90
10/15/76	938.	0.0	58.50	4.54	45.31	18.44
10/15/76	938.	3.5	58.99	4.51	44.52	17.98
1/ 5/77	916.	0.0	65.62	5.30	43.29	18.73
1/ 5/77	916.	3.0	67.26	5.32	43.77	18.77
3/10/77	922.	0.0	57.71	5.83	46.95	18.54
3/10/77	922.	3.5	58.03	5.82	46.37	18.63

ANALYTICAL DATA AT BPS-15 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
5/12/76	850.	0.0			
5/12/76	850.	3.0			
5/25/76	830.	0.0			
5/25/76	830.	3.0			
6/16/76	855.	0.0			
6/16/76	855.	3.0			
7/14/76	925.	0.0	5.2		
7/14/76	925.	3.0	15.0		
8/18/76	920.	0.0			
8/18/76	920.	3.5			
9/16/76	845.	0.0	16.0		
9/16/76	845.	3.5	14.0	23.0	
9/30/76	900.	0.0	11.0	11.0	
9/30/76	900.	3.5	16.0	23.0	
10/15/76	938.	0.0	24.0	22.0	
10/15/76	938.	3.5	23.0	27.0	
1/ 5/77	916.	0.0	45.0		1.03
1/ 5/77	914.	3.0	49.0		1.25
2/10/77	922.	0.0	13.0	73.0	1.29
2/10/77	922.	3.5	29.0	45.0	1.27

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
5/12/76	924.	0.0	0.820	< 0.004	0.816	0.06	1.37
5/25/76	900.	0.0	0.287	< 0.004	0.283	< 0.01	1.44
6/16/76	925.	0.0	0.323	< 0.004	0.319	< 0.01	1.37
7/14/76	1003.	0.0	0.013	< 0.004	0.009	< 0.06	1.37
8/18/76	950.	0.0	0.133	0.006	0.127	0.04	1.32
9/16/76	915.	0.0	0.087	0.010	0.077	< 0.01	1.18
9/30/76	935.	0.0	0.064	< 0.004	0.060	< 0.01	1.07
10/15/76	1013.	0.0	0.020	0.005	0.015	0.02	1.99
1/ 5/77	957.	0.0	0.249	< 0.004	0.245	0.04	1.40
3/ 9/77	1450.	0.0	0.532	< 0.004	0.528	< 0.01	2.09

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
5/12/76	924.	0.0	0.035	0.061		102.4	2.80
5/25/76	900.	0.0	0.040	0.104		93.9	2.82
6/16/76	925.	0.0	0.030	0.039		95.1	2.93
7/14/76	1003.	0.0	0.011	0.021		93.3	2.86
8/18/76	950.	0.0	< 0.002	0.021	84.3	94.7	3.01
9/16/76	915.	0.0	0.029	0.040	59.7	95.2	2.74
9/30/76	935.	0.0	< 0.002	0.042	46.8	91.6	2.75
10/15/76	1013.	0.0	0.002	0.019	63.0	100.4	3.26
1/ 5/77	957.	0.0	0.053	0.055	64.9	92.3	2.69
3/ 9/77	1450.	0.0	0.038	0.120	59.1	93.1	2.65

ANALYTICAL DATA AT BPS-16

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
5/12/76	924.	0.0	59.92		50.34	20.19
5/25/76	900.	0.0	61.67		48.61	21.45
6/16/76	925.	0.0	68.42		50.93	22.93
7/14/76	1003.	0.0	57.34		45.79	17.79
8/18/76	950.	0.0	63.16	4.77	46.64	19.44
9/16/76	915.	0.0	65.29	4.28	49.19	17.52
9/30/76	935.	0.0	61.53	4.32	48.50	18.09
10/15/76	1013.	0.0	81.26	4.98	49.91	20.24
1/ 5/77	957.	0.0	68.30	5.41	41.37	19.17
3/ 9/77	1450.	0.0	58.34	5.92	47.39	18.71

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
5/12/76	924.	0.0			
5/25/76	900.	0.0			
6/16/76	925.	0.0			
7/14/76	1003.	0.0	1.6		
8/18/76	950.	0.0			
9/16/76	915.	0.0	6.1	9.0	
9/30/76	935.	0.0	4.1	6.0	
10/15/76	1013.	0.0	12.0	10.0	
1/ 5/77	957.	0.0	27.0		0.69
3/ 9/77	1450.	0.0	20.0	32.0	1.08

ANALYTICAL DATA AT BPS-16 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
5/12/76	1113.	0.0	0.021	< 0.004	0.017	0.03	1.25
5/25/76	1015.	0.0	0.049	< 0.004	0.044	< 0.01	1.55
6/16/76	1045.	0.0	0.012	< 0.004	0.008	< 0.01	2.08
7/14/76	1137.	0.0	< 0.004	< 0.004	< 0.004	< 0.06	1.55
8/17/76	1310.	0.0	0.014	< 0.004	0.010	< 0.01	1.36
9/14/76	1135.	0.0	0.110	0.017	0.093	0.04	2.13
9/28/76	1100.	0.0	0.073	< 0.004	0.069	0.05	1.58
10/13/76	1145.	0.0	0.085	0.005	0.080	0.02	2.18
1/ 4/77	1309.	0.0	< 0.004	< 0.004	< 0.004	0.02	1.56
3/10/77	1025.	0.0	0.366	< 0.004	0.362	0.06	1.90
6/16/77	930.	0.0	< 0.004	< 0.004	< 0.004	< 0.01	0.90
7/13/77	1450.	0.0	0.005	< 0.004	< 0.004	< 0.01	2.45
8/16/77	1220.	0.0	< 0.004	< 0.004	< 0.004	< 0.01	1.57

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
5/12/76	1113.	0.0	0.003	0.028		94.3	2.64
5/25/76	1015.	0.0	< 0.002	0.011		106.4	2.09
6/16/76	1045.	0.0	0.004	0.007		131.2	2.65
7/14/76	1137.	0.0	< 0.002	0.009		116.4	2.92
8/17/76	1310.	0.0	< 0.002	0.009	92.6	108.7	2.29
9/14/76	1135.	0.0	0.005	0.012	90.1	129.4	
9/28/76	1100.	0.0	< 0.002	0.015	65.3	113.7	4.60
10/13/76	1145.	0.0	0.007	0.025	72.2	110.2	3.26
1/ 4/77	1309.	0.0	0.003	0.031	61.3	104.0	2.96
3/10/77	1025.	0.0	0.021	0.075	61.1	97.8	2.78
6/16/77	930.	0.0	< 0.002	0.014	51.1	95.5	1.93
7/13/77	1450.	0.0	< 0.002	0.016	58.1	104.5	1.96
8/16/77	1220.	0.0	< 0.002	0.003	74.0	113.2	1.65

ANALYTICAL DATA AT BPS-17

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
5/12/76	1113.	0.0	66.97		46.58	19.05
5/25/76	1015.	0.0	66.92		34.87	22.14
6/16/76	1045.	0.0	91.60		38.05	32.32
7/14/76	1137.	0.0	77.76		37.44	22.87
8/17/76	1310.	0.0	73.05	5.30	32.77	22.00
9/14/76	1135.	0.0	92.48	5.76	76.85	28.06
9/28/76	1100.	0.0	82.33	5.61	70.16	26.98
10/13/76	1145.	0.0	78.17	5.89	58.80	25.03
1/ 4/77	1309.	0.0	65.32	5.43	52.56	19.21
3/10/77	1025.	0.0	59.91	6.11	50.33	19.64
6/16/77	930.	0.0	65.53	4.16	35.69	19.87
7/13/77	1450.	0.0	74.02	4.19	22.14	19.52
8/16/77	1220.	0.0	60.27	4.65	29.67	24.32

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TURB JTU	T.SUS.SO MG/L		TOTAL FE MG/L
5/12/76	1113.	0.0				
5/25/76	1015.	0.0				
6/16/76	1045.	0.0				
7/14/76	1137.	0.0	1.1			
8/17/76	1310.	0.0	2.4			
9/14/76	1135.	0.0	2.8	4.0		
9/28/76	1100.	0.0	3.1	7.0		
10/13/76	1145.	0.0	27.0	29.6		
1/ 4/77	1309.	0.0	11.0			0.13
3/10/77	1025.	0.0	36.0	43.0		0.75
6/16/77	930.	0.0	6.0	9.0		0.14
7/13/77	1450.	0.0		11.0	<	0.02
8/16/77	1220.	0.0	0.[illegible]	4.0		0.02

ANALYTICAL DATA AT BPS-17 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
5/12/76	1136.	0.0	0.014	< 0.004	0.010	< 0.01	1.58
5/25/76	1045.	0.0	2.972	0.257	2.715	0.35	4.04
6/16/76	1100.	0.0	0.224	0.005	0.219	< 0.01	2.65
7/14/76	1152.	0.0	0.009	< 0.004	0.005	< 0.06	2.16
8/17/76	1222.	0.0	0.009	< 0.004	0.005	< 0.01	1.71
9/14/76	1145.	0.0	0.309	0.036	0.273	0.20	2.20
9/28/76	1115.	0.0	0.110	0.008	0.102	0.04	2.00
10/13/76	1215.	0.0	0.108	0.008	0.100	0.18	2.69
1/ 4/77	1322.	0.0	0.005	< 0.004	< 0.004	< 0.01	2.23
3/ 8/77	1225.	0.0	0.222	< 0.004	0.218	< 0.01	2.27

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
5/12/76	1136.	0.0	< 0.002	0.005		110.0	2.11
5/25/76	1045.	0.0	0.018	0.034		138.7	6.40
6/16/76	1100.	0.0	0.004	0.016		135.6	4.95
7/14/76	1152.	0.0	< 0.002	0.019		99.5	3.07
8/17/76	1222.	0.0	< 0.002	0.043	87.2	122.4	2.40
9/14/76	1145.	0.0	0.034	0.051	79.0	117.7	
9/28/76	1115.	0.0	< 0.002	0.020	66.5	136.8	5.30
10/13/76	1215.	0.0	< 0.002	0.017	79.8	125.9	4.27
1/ 4/77	1322.	0.0	< 0.002	0.031		87.8	2.75
3/ 8/77	1225.	0.0	0.009	0.096	61.3	97.4	2.93

ANALYTICAL DATA AT BPS-18

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
5/12/76	1136.	0.0	79.53		32.52	21.73
5/25/76	1045.	0.0	92.03		115.81	41.30
6/16/76	1100.	0.0	93.15		85.64	38.39
7/14/76	1152.	0.0	67.41		49.28	21.30
8/17/76	1322.	0.0	66.18	6.45	51.21	27.66
9/14/76	1145.	0.0	78.80	5.31	65.96	23.09
9/28/76	1115.	0.0	98.36	6.61	81.52	32.21
10/13/76	1215.	0.0	84.99	4.77	54.68	29.22
1/ 4/77	1322.	0.0	64.28	5.30	45.69	18.77
3/ 8/77	1225.	0.0	61.49	6.18	50.92	19.68

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
5/12/76	1136.	0.0			
5/25/76	1045.	0.0			
6/16/76	1100.	0.0			
7/14/76	1152.	0.0	1.2		
8/17/76	1322.	0.0	1.0		
9/14/76	1145.	0.0	2.2	6.0	
9/28/76	1115.	0.0	3.0	4.0	
10/13/76	1215.	0.0	16.0	14.0	
1/ 4/77	1322.	0.0	17.0		0.11
3/ 8/77	1225.	0.0	15.0	62.0	0.63

ANALYTICAL DATA AT BPS-18 (CONTINUED)

ANALYTICAL DATA AT BPS-19

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS		NOX MG/L		NO2 MG/L		NO3 MG/L		NH4 MG/L	TKN MG/L
5/12/76	1010.	0.0		0.099	<	0.004		0.095	<	0.01	1.34
5/25/76	925.	0.0		0.047		0.015		0.032	<	0.01	1.71
6/16/76	1000.	0.0		0.076		0.007		0.069		0.04	1.86
7/14/76	1030.	0.0	<	0.004	<	0.004	<	0.004	<	0.06	2.13
8/17/76	1254.	0.0		0.014	<	0.004		0.010	<	0.01	1.54
9/14/76	1125.	0.0		0.075		0.014		0.061		0.03	2.24
9/28/76	1050.	0.0		0.018	<	0.004		0.014		0.04	1.34
10/13/76	1130.	0.0		0.247		0.008		0.239		0.06	1.60
1/ 4/77	1256.	0.0	<	0.004	<	0.004	<	0.004	<	0.01	1.52
3/10/77	1020.	0.0		0.100	<	0.004		0.096	<	0.01	1.96

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS		O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
5/12/76	1010.	0.0		0.004	0.017		102.4	2.51
5/25/76	925.	0.0	<	0.002	0.012		125.2	3.07
6/16/76	1000.	0.0	<	0.002	0.003		123.7	3.33
7/14/76	1030.	0.0	<	0.002	0.008		129.6	2.25
8/17/76	1254.	0.0	<	0.002	0.009	6.4	112.7	2.31
9/14/76	1125.	0.0		0.015	0.013	94.1	133.8	4.42
9/28/76	1030.	0.0	<	0.002	0.022	79.2	99.1	3.26
10/13/76	1130.	0.0		0.006	0.026	63.5	101.0	3.41
1/ 4/77	1256.	0.0		0.012	0.028		86.6	2.64
3/10/77	1020.	0.0		0.002	0.093	64.5	101.4	3.16

ANALYTICAL DATA AT BPS-19 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
5/12/76	1010.	0.0	66.04		43.48	19.17
5/25/76	925.	0.0	80.35		53.08	25.97
6/16/76	1000.	0.0	87.08		56.12	31.81
7/14/76	1030.	0.0	87.98		46.70	29.34
8/17/76	1254.	0.0	76.45	5.40	33.88	23.76
9/14/76	1125.	0.0	96.50	6.05	67.51	28.98
9/28/76	1050.	0.0	71.05	4.76	56.80	19.11
10/13/76	1130.	0.0	67.93	4.90	51.66	20.87
1/ 4/77	1256.	0.0	61.15	5.19	43.90	17.99
3/10/77	1020.	0.0	64.79	6.51	56.20	21.46

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
5/12/76	1010.	0.0			
5/25/76	925.	0.0			
6/16/76	1000.	0.0			
7/14/76	1030.	0.0	1.4		
8/17/76	1254.	0.0	1.1		
9/14/76	1125.	0.0	1.9	5.0	
9/28/76	1050.	0.0	3.5	4.0	
10/13/76	1130.	0.0	33.0	53.0	
1/ 4/77	1256.	0.0	14.0		0.15
3/10/77	1020.	0.0	14.0	51.0	0.51

ANALYTICAL DATA AT BPS-20

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
5/11/76	1405.	0.0	0.025	0.004	0.021	< 0.01	1.90
5/24/76	1040.	0.0	3.388	0.246	3.142	0.52	4.60
6/15/76	1020.	0.0	[illegible]	0.007	0.056	0.06	3.03
7/13/76	1112.	0.0	0.133	0.014	0.119	< 0.04	2.19
8/17/76	1000.	0.0	0.084	0.011	0.073	0.04	1.86
9/14/76	1210.	0.0	1.431	0.077	1.354	0.13	2.47
9/28/76	1300.	0.0	0.107	0.014	0.092	0.01	2.17
10/13/76	1335.	0.0	0.068	0.005	0.063	0.02	2.37
1/ 4/77	1422.	0.0	0.067	< 0.004	0.063	0.02	0.95
3/ 9/77	1110.	0.0	0.104	< 0.004	0.100	0.03	1.65

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
5/11/76	1405.	0.0	< 0.002	0.020		119.5	2.71
5/24/76	1040.	0.0	0.056	0.120		154.1	6.62
6/15/76	1020.	0.0	0.018	0.035		156.0	6.82
7/13/76	1112.	0.0	0.003	0.041		115.4	4.37
8/17/76	1000.	0.0	0.011	0.035	87.4	121.4	3.37
9/14/76	1210.	0.0	0.044	0.041	98.3	121.9	5.19
9/28/76	1300.	0.0	0.003	0.043	58.7	144.0	6.83
10/13/76	1335.	0.0	< 0.002	0.015	85.9	142.5	4.69
1/ 4/77	1422.	0.0	< 0.002	0.032	53.2	88.4	3.32
3/ 9/77	1110.	0.0	0.004	0.055	63.1	99.4	3.25

ANALYTICAL DATA AT BPS-20 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
5/11/76	1405.	0.0	85.73		42.50	24.62
5/24/76	1040.	0.0	64.30		67.14	27.08
6/15/76	1020.	0.0	109.98		97.26	39.96
7/13/76	1112.	0.0	79.51		66.59	25.59
8/17/76	1000.	0.0	82.77	5.98	57.05	27.16
9/14/76	1210.	0.0	83.79	5.20	95.69	25.22
9/28/76	1200.	0.0	102.81	6.73	102.56	36.12
10/13/76	1235.	0.0	95.72	6.57	71.98	33.00
1/ 4/77	1423.	0.0	62.64	5.41	50.17	19.25
3/ 8/77	1110.	0.0	62.43	6.43	55.32	20.53

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
5/11/76	1405.	0.0			
5/24/76	1040.	0.0			
6/15/76	1020.	0.0			
7/13/76	1112.	0.0	1.9		
8/17/76	1000.	0.0	2.9		
9/14/76	1210.	0.0	2.2	8.0	
9/28/76	1200.	0.0	3.2	6.0	
10/13/76	1235.	0.0	3.1	9.0	
1/ 4/77	1423.	0.0	4.[illegible]		0.04
3/ 8/77	1110.	0.0	5.[illegible]	12.0	0.07

ANALYTICAL DATA AT BPS-22

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
5/12/76	1022.	0.0	0.025	< 0.004	0.021	< 0.01	1.31
5/25/76	940.	0.0	< 0.004	0.005	< 0.004	< 0.01	1.58
6/16/76	1010.	0.0	0.218	< 0.004	0.214	< 0.01	1.61
7/14/76	1109.	0.0	< 0.004	< 0.004	< 0.004	< 0.06	1.22
8/17/76	1235.	0.0	0.019	< 0.004	0.015	< 0.01	1.42
9/14/76	1110.	0.0	0.044	0.010	0.034	0.02	1.58
9/28/76	1035.	0.0	0.200	< 0.004	0.196	< 0.01	1.28
10/13/76	1110.	0.0	0.213	< 0.004	0.209	0.02	1.66
1/ 4/77	1240.	0.0	< 0.004	< 0.004	< 0.004	< 0.01	1.95
3/10/77	1010.	0.0	0.552	< 0.004	0.548	< 0.01	2.34

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
5/12/76	1022.	0.0	0.003	0.031		92.7	2.71
5/25/76	940.	0.0	< 0.002	0.011		112.4	2.60
6/16/76	1010.	0.0	0.003	0.014		103.2	3.08
7/14/76	1109.	0.0	< 0.002	0.014		94.7	2.60
8/17/76	1235.	0.0	< 0.002	0.018	63.8	97.9	2.62
9/14/76	1110.	0.0	0.011	0.021	73.8	110.6	3.52
9/28/76	1035.	0.0	0.009	0.044	64.2	100.7	3.37
10/13/76	1110.	0.0	0.037	0.060	54.1	97.4	3.00
1/ 4/77	1240.	0.0	< 0.002	0.029		136.9	2.71
3/10/77	1010.	0.0	0.029	0.155	61.3	96.2	2.76

ANALYTICAL DATA AT BPS-22 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
5/12/76	1022.	0.0	64.03		45.11	18.66
5/25/76	940.	0.0	72.76		41.99	23.76
6/16/76	1010.	0.0	72.23		54.69	25.06
7/14/76	1109.	0.0	60.26		41.24	16.71
8/17/76	1235.	0.0	65.43	4.94	46.01	20.11
9/14/76	1110.	0.0	77.52	5.45	60.59	21.18
9/28/76	1035.	0.0	70.42	4.54	54.80	21.70
10/13/76	1110.	0.0	61.75	4.77	56.42	18.61
1/ 4/77	1240.	0.0	57.87	4.99	41.36	17.38
3/10/77	1010.	0.0	61.49	6.25	50.77	19.68

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
5/12/76	1022.	0.0			
5/25/76	940.	0.0			
6/16/76	1010.	0.0			
7/14/76	1109.	0.0	1.4		
8/17/76	1235.	0.0	2.4		
9/14/76	1110.	0.0	2.1	5.0	
9/28/76	1035.	0.0	2.2	3.0	
10/13/76	1110.	0.0	29.0	83.1	
1/ 4/77	1240.	0.0	12.0		0.21
3/10/77	1010.	0.0	26.0	65.0	1.29

ANALYTICAL DATA AT BPS-23

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/27/76	1440.	0.0	0.010	< 0.004	0.006	0.03	1.90
5/11/76	1320.	0.0	0.025	0.005	0.030	0.03	1.66
5/24/76	955.	0.0	3.942	0.365	3.577	0.47	4.88
6/15/76	945.	0.0	0.752	0.041	0.711	0.02	2.82
7/13/76	1030.	0.0	1.211	0.173	1.038	0.24	3.09
8/17/76	930.	0.0	0.255	0.044	0.211	0.44	2.57
9/14/76	1005.	0.0	1.687	0.106	1.581	0.55	2.84
9/28/76	1340.	0.0	0.598	0.050	0.548	0.06	2.16
10/13/76	1430.	0.0	0.161	0.006	0.155	0.01	1.61
1/ 4/77	340.	0.0	0.236	0.004	0.232	0.02	1.46
3/ 8/77	1030.	0.0	0.103	< 0.004	0.099	0.02	2.56

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/27/76	1440.	0.0	0.005	0.027		119.1	3.45
5/11/76	1320.	0.0	< 0.002	0.019		105.0	2.75
5/24/76	955.	0.0	0.056	0.136		139.6	6.85
6/15/76	945.	0.0	0.010	0.034		137.4	6.11
7/13/76	1030.	0.0	0.053	0.082		166.6	7.95
8/17/76	930.	0.0	0.026	0.060	84.4	169.1	5.66
9/14/76	1005.	0.0	0.095	0.098	91.6	169.2	8.99
9/28/76	1340.	0.0	0.018	0.062		127.0	6.29
10/13/76	1430.	0.0	0.014	0.020	61.9	132.9	4.62
1/ 4/77	340.	0.0	0.026	0.052		94.9	3.25
3/ 8/77	1030.	0.0	0.011	0.110	62.6	99.8	3.13

ANALYTICAL DATA AT BPS-23 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/27/76	1440.	0.0	75.41		55.73	21.59
5/11/76	1320.	0.0	72.09		45.76	21.41
5/24/76	955.	0.0	96.41		117.96	47.30
6/15/76	945.	0.0	95.70		107.46	39.37
7/13/76	1030.	0.0	115.69		115.30	42.00
8/17/76	930.	0.0	118.27	7.17	79.74	33.11
9/16/76	1005.	0.0	121.12	7.34	134.17	40.01
9/28/76	1340.	0.0	69.63	6.30	97.90	30.72
10/13/76	1430.	0.0	92.63	6.33	75.63	32.37
1/ 4/77	940.	0.0	64.58	5.62	48.81	19.91
3/ 8/77	1030.	0.0	62.74	6.43	58.11	20.91

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/27/76	1440.	0.0			
5/11/76	1320.	0.0			
5/24/76	955.	0.0			
6/15/76	945.	0.0			
7/13/76	1030.	0.0	3.2		
8/17/76	930.	0.0	2.1		
9/16/76	1005.	0.0	1.9	5.0	
9/28/76	1340.	0.0	3.7	5.0	
10/13/76	1430.	0.0	6.5	13.0	
1/ 4/77	940.	0.0	11.0		0.05
3/ 8/77	1030.	0.0	15.0	67.0	0.64

ANALYTICAL DATA AT BPS-24

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
5/11/76	1030.	0.0	0.217	0.008	0.209	0.08	1.32
5/24/76	850.	0.0	4.652	0.246	4.406	0.50	4.88
6/15/76	915.	0.0	0.916	0.055	0.861	0.06	2.82
7/13/76	940.	0.0	1.059	0.077	0.982	0.27	3.02
8/17/76	855.	0.0	2.506	0.150	2.356	0.45	4.25
9/14/76	935.	0.0	1.650	0.099	1.551	0.54	2.78
9/28/76	910.	0.0	0.763	0.097	0.666	0.70	3.54
10/13/76	1535.	0.0	0.023	0.006	0.017	0.01	2.84
1/ 4/77	953.	0.0	0.179	< 0.004	0.175	0.02	2.20
3/ 8/77	940.	0.0	0.119	< 0.004	0.115	< 0.01	2.06

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
5/11/76	1030.	0.0	0.022	0.045		101.0	2.95
5/24/76	850.	0.0	0.056	0.147		140.2	7.18
6/15/76	915.	0.0	0.005	0.031		149.1	6.61
7/13/76	940.	0.0	0.058	0.091		152.8	7.06
8/17/76	855.	0.0	0.027	0.109	120.1	198.8	7.98
9/14/76	935.	0.0	0.079	0.096	97.6	168.2	8.97
9/28/76	910.	0.0	0.052	0.079	127.7	179.6	10.50
10/13/76	1535.	0.0	0.004	0.026	99.6	164.6	6.64
1/ 4/77	953.	0.0	0.011	0.042		90.2	3.23
3/ 8/77	940.	0.0	0.004	0.194	64.5	100.4	3.21

ANALYTICAL DATA AT BPS-24 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
5/11/76	1030.	0.0	69.92		50.67	20.90
5/24/76	850.	0.0	97.14		117.13	47.57
6/15/76	915.	0.0	94.57		109.61	40.01
7/13/76	940.	0.0	102.56		105.16	38.01
8/17/76	855.	0.0	137.56	6.24	123.09	47.77
9/14/76	935.	0.0	122.56	6.92	132.40	40.75
9/28/76	910.	0.0	124.40	6.98	142.02	52.85
10/13/76	1536.	0.0	111.33	7.48	103.73	41.02
1/ 4/77	953.	0.0	65.02	5.58	48.81	19.62
2/ 8/77	940.	0.0	53.84	6.43	57.96	21.29

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
5/11/76	1030.	0.0			
5/24/76	850.	0.0			
6/15/76	915.	0.0			
7/13/76	940.	0.0	2.2		
8/17/76	855.	0.0	1.9		
9/14/76	935.	0.0	2.3	14.0	
9/28/76	910.	0.0	2.4	7.0	
10/13/76	1536.	0.0	5.6	10.0	
1/ 4/77	953.	0.0	24.0		0.23
2/ 8/77	940.	0.0	14.0	50.0	0.39

ANALYTICAL DATA AT BPS-25

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
5/11/76	1055.	0.0	< 0.004	< 0.004	< 0.004	< 0.01	1.56
5/24/76	825.	0.0	4.028	0.177	3.851	0.35	4.53
6/15/76	905.	0.0	1.028	0.044	0.984	0.01	
7/13/76	911.	0.0	0.516	0.007	0.509	< 0.06	2.74
8/17/76	845.	0.0	0.082	0.019	0.063	0.57	2.56
9/14/76	900.	0.0	0.344	0.025	0.319	0.01	3.05
9/28/76	855.	0.0	0.641	0.035	0.606	0.01	2.62
10/13/76	1552.	0.0	0.105	0.010	0.095	0.06	
1/ 4/77	925.	0.0	0.008	< 0.004	0.004	< 0.01	2.04
3/ 8/77	900.	0.0	0.020	< 0.004	0.016	< 0.01	1.93
6/16/77	1100.	0.0	< 0.004	< 0.004	< 0.004	< 0.01	1.55
7/13/77	1330.	0.0	0.026	0.008	0.018	0.05	2.24
8/16/77	1330.	0.0	1.132	0.161	0.971	0.20	2.90

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
5/11/76	1055.	0.0	< 0.002	0.038		104.2	2.77
5/24/76	825.	0.0	0.045	0.092		152.6	6.51
6/15/76	905.	0.0	< 0.002	0.026		163.6	8.85
7/13/76	911.	0.0	0.003	0.025		163.2	6.34
8/17/76	845.	0.0	0.081	0.035	93.2	170.1	5.13
9/14/76	900.	0.0	0.037	0.030	103.0	151.0	6.52
9/28/76	855.	0.0	0.002	0.028	110.5	180.2	9.58
10/13/76	1552.	0.0	0.006	0.021	103.1	178.6	7.49
1/ 4/77	925.	0.0	0.003	0.033		84.8	2.79
3/ 8/77	900.	0.0	0.004	0.087	62.3	99.4	3.13
6/16/77	1100.	0.0	< 0.002	0.048	68.2	118.1	2.93
7/13/77	1330.	0.0	< 0.002	0.045	66.7	113.2	2.35
8/16/77	1330.	0.0	0.030	0.032	143.0	165.6	4.35

ANALYTICAL DATA AT BPS-25 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
5/11/76	1055.	0.0	73.48		45.11	21.26
5/24/76	825.	0.0	99.33		113.33	46.14
6/15/76	905.	0.0	120.15		130.54	46.20
7/13/76	911.	0.0	108.25		96.97	38.77
8/17/76	845.	0.0	120.54	6.16		35.13
9/14/76	900.	0.0	108.08	6.69	97.30	35.12
9/28/76	855.	0.0	122.65	6.57	128.66	49.19
10/13/76	1552.	0.0	121.09	7.93	105.95	49.80
1/ 4/77	925.	0.0	60.85	5.10	42.20	17.99
3/ 8/77	900.	0.0	62.59	6.34	57.23	21.16
6/16/77	1100.	0.0	85.43	5.25	49.12	26.03
7/13/77	1330.	0.0	80.46	5.02	29.79	22.19
8/16/77	1330.	0.0	117.65	7.27	108.59	50.23

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
5/11/76	1055.	0.0			
5/24/76	825.	0.0			
6/15/76	905.	0.0			
7/13/76	911.	0.0	2.6		
8/17/76	845.	0.0	3.0		
9/14/76	900.	0.0	2.4	12.0	
9/28/76	855.	0.0	4.2	11.0	
10/13/76	1552.	0.0	2.3	19.0	
1/ 4/77	925.	0.0	15.0		0.18
3/ 8/77	900.	0.0	13.0	40.0	0.37
6/16/77	1100.	0.0	3.4	11.0	0.14
7/13/77	1330.	0.0		20.0	0.11
8/16/77	1330.	0.0	0.9	7.0	0.05

ANALYTICAL DATA AT BPS-26

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
5/12/76	1038.	0.0	0.008	< 0.004	0.004	< 0.01	1.30
5/25/76	950.	0.0	< 0.004	< 0.004	< 0.004	0.02	1.35
6/16/76	1035.	0.0	0.256	< 0.004	0.252	0.01	1.58
7/14/76	1045.	0.0	< 0.004	< 0.004	< 0.004	0.17	1.97
8/17/76	1222.	0.0	0.009	< 0.004	0.005	0.03	1.53
9/14/76	1055.	0.0	0.043	0.011	0.032	0.16	2.09
9/28/76	1030.	0.0	0.108	0.010	0.098	< 0.01	1.55
10/13/76	1047.	0.0	0.167	< 0.004	0.163	0.01	0.70
1/ 4/77	1152.	0.0	0.016	0.012	< 0.004	0.01	1.46
3/ 8/77	920.	0.0	0.180	< 0.004	0.176	0.02	2.26
6/16/77	1145.	0.0	0.006	< 0.004	< 0.004	< 0.01	0.85
7/13/77	1435.	0.0	< 0.004	< 0.004	< 0.004	< 0.01	1.95
8/16/77	1345.	0.0	0.092	0.024	0.068	< 0.01	1.68

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
5/12/76	1035.	0.0	< 0.002	0.021		94.3	2.79
5/25/76	950.	0.0	< 0.002	0.021		103.8	1.66
6/16/76	1035.	0.0	0.015	0.027		98.3	2.90
7/14/76	1045.	0.0		0.010		131.8	3.44
8/17/76	1222.	0.0	0.004	0.017	63.8	103.5	2.60
9/14/76	1055.	0.0	< 0.002	0.021	63.7	119.3	4.23
9/28/76	1030.	0.0	< 0.002	0.030	63.5	108.7	4.18
10/13/76	1047.	0.0	0.029	0.066	50.8	86.3	2.97
1/ 4/77	1152.	0.0	0.002	0.027		82.3	2.68
3/ 8/77	920.	0.0	0.018	0.183	62.6	100.4	3.05
6/16/77	1145.	0.0	< 0.002	0.018	52.1	93.7	2.10
7/13/77	1435.	0.0	< 0.002	0.051	44.2	102.3	2.60
8/16/77	1345.	0.0	< 0.002	0.013	83.4	132.0	2.55

ANALYTICAL DATA AT BPS-26 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
5/12/76	1038.	0.0	65.27		47.07	19.21
5/25/76	950.	0.0	68.67		27.25	20.99
6/16/76	1035.	0.0	70.26		48.60	24.55
7/14/76	1045.	0.0	86.95		47.48	29.97
8/17/76	1222.	0.0	73.21	5.25		20.23
9/14/76	1055.	0.0	86.69	5.54	64.61	25.32
9/28/76	1030.	0.0	75.82	5.01	63.76	24.21
10/13/76	1047.	0.0	60.12	4.42	46.10	17.10
1/ 4/77	1152.	0.0	58.02	4.96	42.03	17.18
3/ 8/77	920.	0.0	64.31	6.37	50.48	20.78
6/16/77	1145.	0.0	67.23	4.15	37.72	19.87
7/13/77	1435.	0.0	74.02	4.34	25.64	21.05
8/16/77	1345.	0.0	91.34	5.25	49.48	4.19

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
5/12/76	1038.	0.0			
5/25/76	950.	0.0			
6/16/76	1035.	0.0			
7/14/76	1045.	0.0	0.9		
8/17/76	1222.	0.0	1.8		
9/14/76	1055.	0.0	2.8	9.0	
9/28/76	1030.	0.0	5.3	8.0	
10/13/76	1047.	0.0	59.0	116.7	
1/ 4/77	1152.	0.0	15.0		0.20
3/ 8/77	920.	0.0	12.0	44.0	0.02
6/16/77	1145.	0.0	0.5	6.0	0.15
7/13/77	1435.	0.0		9.0	0.04
8/16/77	1345.	0.0	0.5	4.0	< 0.02

ANALYTICAL DATA AT BPS-27

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
4/27/76	1030.	0.0	0.007	< 0.004	< 0.004	< 0.01	1.61
5/13/76	930.	0.0	0.282	0.004	0.278	0.10	1.42
5/26/76	905.	0.0	0.008	< 0.004	0.004	< 0.01	1.36
6/15/76	1240.	0.0	0.305	< 0.004	0.301	0.01	1.58
7/13/76	1255.	0.0	< 0.004	< 0.004	< 0.004	0.02	1.20
8/17/76	1143.	0.0	0.082	0.006	0.076	< 0.01	1.49
9/14/76	1040.	0.0	0.027	0.010	0.017	0.02	1.46
9/28/76	1015.	0.0	0.152	0.008	0.144	0.13	1.11
10/13/76	1020.	0.0	0.180	< 0.004	0.176	0.02	1.78
1/ 4/77	1130.	0.0	0.007	< 0.004	< 0.004	< 0.01	1.64
3/ 8/77	1425.	0.0	0.478	< 0.004	0.474	0.03	2.15

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/27/76	1030.	0.0	0.009	0.027		104.4	2.85
5/13/76	930.	0.0	0.020	0.033		99.9	2.91
5/26/76	905.	0.0	< 0.002	0.017		100.4	1.93
6/15/76	1240.	0.0	0.015	0.031		98.7	2.75
7/13/76	1255.	0.0	0.003	0.020		93.9	2.67
8/17/76	1143.	0.0	< 0.002	0.028	66.4	104.5	3.09
9/14/76	1040.	0.0	0.016	0.026	71.1	107.3	3.15
9/28/76	1015.	0.0	0.030	0.049	52.4	95.2	2.93
10/13/76	1020.	0.0	0.037	0.060	52.1	90.3	3.01
1/ 4/77	1130.	0.0	< 0.002	0.027		95.5	2.82
3/ 8/77	1425.	0.0	0.033	0.205	56.8	93.9	2.66

ANALYTICAL DATA AT BPS-27 (CONTINUED)

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/27/76	1030.	0.0	69.36		47.90	18.70
5/13/76	930.	0.0	70.23			20.43
5/26/76	905.	0.0	67.22		32.72	20.99
6/15/76	1240.	0.0	67.57		50.93	22.50
7/13/76	1255.	0.0	59.68		41.91	16.24
8/17/76	1143.	0.0	70.94	4.90	50.16	20.53
9/14/76	1040.	0.0	75.59	4.75	55.44	20.52
9/28/76	1015.	0.0	63.11	4.21	53.28	19.15
10/13/76	1020.	0.0	62.56	4.72	49.48	17.81
1/ 4/77	1130.	0.0	59.66	5.19	43.39	18.07
3/ 8/77	1425.	0.0	58.50	5.92	45.78	18.29

DATE MO/DA/YR	TIME HOUR,MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/27/76	1030.	0.0			
5/13/76	930.	0.0			
5/26/76	905.	0.0			
6/15/76	1240.	0.0			
7/13/76	1255.	0.0	0.9		
8/17/76	1143.	0.0	3.0		
9/14/76	1040.	0.0	3.0	8.0	
9/28/76	1015.	0.0	3.6	2.0	
10/13/76	1020.	0.0	26.0	47.5	
1/ 4/77	1130.	0.0	13.0		0.19
3/ 8/77	1425.	0.0	27.0	95.0	1.55

ANALYTICAL DATA AT BPS-28

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS		NOX MG/L		NO2 MG/L		NO3 MG/L		NH4 MG/L	TKN MG/L
4/27/76	1123.	0.0		0.113	<	0.004		0.109		0.01	1.51
5/13/76	950.	0.0		0.206		0.005		0.201		0.03	1.43
5/26/76	915.	0.0		0.052	<	0.004		0.048	<	0.01	1.27
6/15/76	1245.	0.0		0.417		0.008		0.409		0.03	1.66
7/13/76	1420.	0.0	<	0.004	<	0.004	<	0.004	<	0.01	1.30
8/17/76	1115.	0.0		0.261		0.036		0.225		0.03	1.61
9/14/76	1030.	0.0		0.088		0.011		0.077		0.04	1.31
9/28/76	1005.	0.0		0.083		0.005		0.078		0.02	1.09
10/13/76	953.	0.0		0.190	<	0.004		0.186	<	0.01	
1/ 4/77	1110.	0.0		0.216	<	0.004		0.212	<	0.01	1.68
3/ 8/77	1420.	0.0		0.335		0.004		0.331		0.04	1.89
6/16/77	1220.	0.0		0.008	<	0.004	<	0.004		0.03	0.94
7/13/77	1420.	0.0	<	0.004	<	0.004	<	0.004	<	0.01	1.98
8/16/77	1355.	0.0		0.177		0.005		0.172	<	0.01	1.37

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS		O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
4/27/76	1123.	0.0		0.020	0.043		102.0	2.89
5/13/76	950.	0.0		0.025	0.050		98.1	3.05
5/26/76	915.	0.0		0.008	0.033		92.8	2.44
6/15/76	1245.	0.0		0.017	0.032		39.1	1.05
7/13/76	1420.	0.0		0.007	0.036		94.7	2.80
8/17/76	1115.	0.0		0.003	0.050	70.7	123.4	3.52
9/14/76	1030.	0.0		0.027	0.046	66.4	101.4	2.88
9/28/76	1005.	0.0		0.022	0.054	48.1	90.8	2.73
10/13/76	953.	0.0		0.021	0.043	71.1	117.8	4.40
1/ 4/77	1110.	0.0	<	0.002	0.028	83.4	86.8	2.76
3/ 8/77	1420.	0.0		0.032	0.055	87.7	101.8	3.01
6/16/77	1220.	0.0	<	0.002	0.029	53.5	96.1	2.20
7/13/77	1420.	0.0	<	0.002	0.043	70.6	97.7	2.74
8/16/77	1355.	0.0		0.026	0.057	55.1	99.8	2.57

ANALYTICAL DATA AT BPS-28 (CONTINUED)

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
4/27/76	1123.	0.0	65.82		49.43	
5/13/76	950.	0.0	69.92			20.19
5/26/76	915.	0.0	62.11		44.35	20.53
6/15/76	1245.	0.0	73.79		61.84	26.60
7/13/76	1430.	0.0	59.53		45.69	17.05
8/17/76	1115.	0.0	85.85	5.67	58.23	24.05
9/14/76	1030.	0.0	69.47	4.53	53.99	16.95
9/28/76	1005.	0.0	58.03	4.06	34.03	17.54
10/13/76	953.	0.0	92.68	6.06	72.30	26.12
1/ 4/77	1110.	0.0	60.85	5.19	41.69	17.99
3/ 8/77	1420.	0.0	66.51	6.46	53.56	20.74
6/16/77	1220.	0.0	68.93	4.30	39.91	20.04
7/13/77	1420.	0.0	67.89	4.10	44.82	20.07
8/16/77	1355.	0.0	66.47	6.45	49.48	21.56

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
4/27/76	1123.	0.0			
5/13/76	950.	0.0			
5/26/76	915.	0.0			
6/15/76	1245.	0.0			
7/13/76	1430.	0.0	1.8		
8/17/76	1115.	0.0	3.6		
9/14/76	1030.	0.0	3.2	8.0	
9/28/76	1005.	0.0	6.7	14.0	
10/13/76	953.	0.0	23.0	62.2	
1/ 4/77	1110.	0.0	18.0		0.33
3/ 8/77	1420.	0.0	5.8	24.0	0.22
6/16/77	1220.	0.0	3.4	7.0	0.17
7/13/77	1420.	0.0		6.0	0.06
8/16/77	1355.	0.0	3.6	6.0	0.13

ANALYTICAL DATA AT BPS-29

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NOX MG/L	NO2 MG/L	NO3 MG/L	NH4 MG/L	TKN MG/L
6/16/77	1240.	0.0	0.022	0.007	0.015	0.01	1.18
6/16/77	1240.	2.8	0.052	0.018	0.034	0.34	1.95
7/13/77	1355.	0.0	0.102	0.021	0.081	0.08	1.79
7/13/77	1355.	3.0	0.161	0.027	0.134	0.19	2.09
8/16/77	1423.	0.0	1.046	0.146	0.900	0.77	3.52
8/16/77	1423.	3.0	1.163	0.146	1.017	0.94	4.22

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	O-PO4 MG/L	T-PO4 MG/L	SO4 MG/L	CL MG/L	ALK MEQ/L
6/16/77	1240.	0.0	0.006	0.047	60.9	113.9	2.61
6/16/77	1240.	2.8	0.050	0.085	97.5	164.9	3.34
7/13/77	1355.	0.0	< 0.002	0.051	85.6	122.0	3.05
7/13/77	1355.	3.0	0.009	0.048	54.7	122.2	3.18
8/16/77	1423.	0.0	0.052	0.144	127.1	158.2	4.07
8/16/77	1423.	3.0	0.063	0.163	145.5	167.6	4.57

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	NA MG/L	K MG/L	CA MG/L	MG MG/L
6/16/77	1240.	0.0	79.13	4.68	45.69	22.17
6/16/77	1240.	2.8	124.21	5.99	56.78	27.81
7/13/77	1355.	0.0	89.42	5.16	47.88	24.99
7/13/77	1355.	3.0	87.69	4.95	48.66	25.03
8/16/77	1423.	0.0	110.27	6.81	100.14	39.29
8/16/77	1423.	3.0	119.57	7.37	108.75	44.96

DATE MO/DA/YR	TIME HOUR.MIN	DEPTH METERS	TURB JTU	T.SUS.SD MG/L	TOTAL FE MG/L
6/16/77	1240.	0.0	2.6	7.0	0.15
6/16/77	1240.	2.8	3.5	14.0	0.19
7/13/77	1355.	0.0		9.0	0.02
7/13/77	1355.	3.0			0.03
8/16/77	1423.	0.0	1.4	3.0	0.04
8/16/77	1423.	3.0	2.5	8.0	0.08